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UNITED STATES NAVAL ACADEMY

ANNAPOLIS, MARYLAND

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Mission of the United States Naval Academy

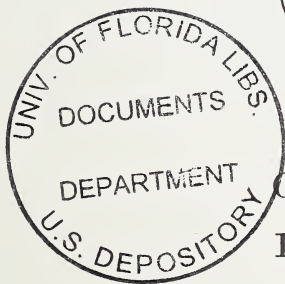
TO develop midshipmen morally, mentally and physically and to imbue them with the highest ideals of duty, honor and loyalty in order to provide graduates who are dedicated to a career of Naval Service and have potential for future development in mind and character to assume the highest responsibilities of command, citizenship and government.

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UNITED STATES NAVAL ACADEMY

ANNAPOLIS
MARYLAND



Catalogue of Information
1963-1964

Reviewed and Approved 8 March 1963

A handwritten signature in black ink, reading "W. R. Smedberg, III".

W. R. SMEDBERG, III
Chief of Naval Personnel



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The Chapel

This is the Naval Academy

The U.S. Naval Academy is the undergraduate college of the U.S. Navy. It was established for the sole purpose of providing properly educated and trained officers for the naval service. Graduates of the fully accredited 4-year course are awarded the bachelor of science degree and are commissioned ensign, U.S. Navy, or second lieutenant in the U.S. Marine Corps.

The Naval Academy is located in Annapolis, historic capital of Maryland. It is 30 miles east of Washington, D.C., and 25 miles south of Baltimore. Visitors, welcome during daylight hours, may obtain information and a map from the guards at the entrance gates to the Academy Yard.

THROUGH THE YEARS—1845–1963

Under the impact of the technological revolution of the early 19th century, the U.S. Navy changed from the age of sail to the age of steam. For this new navy the wisdom of the chaplain doubling as schoolmaster had to be augmented. In 1803 a short-lived school was established at the Washington Navy Yard to supplement the usual training afloat. And after various half-measures, in 1839 a naval school was created at Philadelphia to give an 8-month course for midshipmen preparing for promotion examinations. Finally, in 1845 George Bancroft, the distinguished historian who was Secretary of the Navy in President Polk's cabinet, obtained transfer of Fort Severn from the Army and there caused the U.S. Naval Academy to be established.

The first superintendent was Commander Franklin Buchanan. His seven-man faculty consisted of Lieutenant James H. Ward (gunnery and naval tactics), Professor William Chauvenet (mathematics

and astronomy), Professor Henry H. Lockwood (engineering), Instructor Arsene N. Girault (French), Chaplain George Jones (English), Surgeon John A. Lockwood (chemistry), and passed Midshipman Samuel Marcy (mathematics). Between 50 and 60 midshipmen, formed in two classes, attended the Academy's first convocation held on Friday, October 10, 1845.

Except for the Civil War period when instruction was temporarily transferred to Newport, R.I., the training and education of midshipmen has continued at Annapolis without interruption, surviving the post-Civil War doldrums and then repeatedly expanding to meet the Nation's needs. By 1905 there were 881 midshipmen in residence, and old, outworn buildings were being completely replaced by handsome new structures which are an integral part of the Academy today. Recent construction includes additional wings for Bancroft Hall to improve midshipman housing and provide a brigade library and assembly rooms, a field house large enough not only for athletics but also for the great gathering at the annual graduation exercises, and the Navy-Marine Corps Memorial Stadium built with privately donated funds on land in close proximity to the Academy. Within the year it is expected that ground will be broken for a new science building, the first of a series of major improvements designed to insure adequate laboratories, classrooms, and libraries for the U.S. Naval Academy in the nuclear age.

Noon Meal Formation





THE YARD TODAY

The Naval Academy Yard on the banks of the Severn River comprises 365 acres occupied by 219 major buildings and extensive drill and playing fields. The beautiful setting, where the Severn widens into Chesapeake Bay, is admirably suited for training the midshipmen afloat and for inspiring them with the seaman's love of salt water.

Of all the buildings in the Yard, Bancroft Hall stands out as the center of midshipman activity. It houses the entire Brigade of Midshipmen and provides for most of their daily needs. Among its facilities are tailor and barbershops, post office, medical and dental quarters, soda fountain, bookstore, recreation rooms, a tremendous galley, and the vast Mess Hall where the entire brigade is served at a single sitting.

Throughout the Yard stand monuments honoring naval heroes of the past. In the crypt beneath the dome of the Chapel rests the sarcophagus of the famous Revolutionary War captain, John Paul Jones.

THE BRIGADE OF MIDSHIPMEN

The Brigade of Midshipmen numbers about 4,000. It is divided into two regiments, each regiment into three battalions, and each battalion into four companies. The 24 companies are the basic administrative

units. Each of the subdivisions of the brigade has its own appropriate midshipman officers, headed by the Brigade Commander. Midshipmen stand watch, as aboard ship, and exercise leadership in both the military and administrative activities of the Brigade as a vital part of their training.

The entering class is designated the Fourth Class, and its members are colloquially known as "plebes." Upon completion of their initial year they become Third Classmen, or "youngsters." The next year they become Second Classmen, and in their last year at the Naval Academy they are First Classmen. Each company is made up of members of all four classes in proportion to the size of the class. Each Fourth Classman is assigned to a First Classman for guidance.

Fourth Class indoctrination, a part of the plebe year program, is a system that both tests and trains new midshipmen. Under the direction of the First Class, the plebe participates in the transition from civilian to military life through rigorous training aimed at developing more mature judgment, a sense of responsibility, a desire for personal competence, and an understanding of obedience to commands as fundamental to the proper issuing of commands. Through this discipline, emphasizing honor, courage, and loyalty, the plebe gains a knowledge of, and pride in, the naval profession.

THE MIDSHIPMAN'S ROUTINE

The life of a midshipman is an active one. He follows a well-planned routine from the time he rises in the morning until he goes to bed at night. It is the strict discipline of this routine which distinguishes the Naval Academy from most other colleges.



**Ring Dance
Ceremony**



The Main Chapel—Midshipmen May Attend the Church of their Faith

A midshipman's day begins at 6:15 a.m. He rises and prepares himself for breakfast formation, 30 minutes later. After breakfast he begins a day of study, recitations, drills, and laboratory work. When the academic work is completed at 3 or 4 p.m., he will usually participate in sports or extracurricular activities until evening meal formation at 6:30 p.m. After the evening meal and a brief period of relaxation, he returns to his studies until 11:00 p.m. Five minutes later, the midshipman has "turned in" for the night.

At noon on Saturday the Brigade completes the academic work for the week. Saturday afternoon will find the midshipmen enjoying "liberty" in Annapolis or attending the many intercollegiate athletic contests or participating in them. On Saturday night a dance, or "hop," is usually planned by one of the three upper classes. Motion pictures are shown for all midshipmen on Saturday night, and on Sunday afternoon the three upper classes may escort guests to these movies.

On Sunday morning the midshipmen attend services at the Naval Academy Chapel or at the church of their choosing in the city of Annapolis.

After the First Class has graduated in June, midshipmen of the new First and Third Classes embark on cruise. The summer program gives them an opportunity to apply the knowledge and techniques they have acquired at the Naval Academy to duties in engineering, gunnery, navigation, communications, aviation, and tactics. They learn at first-hand the duties of seamen and petty officers as well as those of junior officers. They gain increased knowledge and a wider understanding

of the Navy. In visits to foreign ports they enjoy seeing the land and meeting the people of America's friends and allies. At the end of cruise, midshipmen receive 30 days leave before beginning the new academic year.

Meanwhile the members of the new Second and Fourth Classes have spent the summer at the Naval Academy. While the Second Classmen are engaged in their newly inaugurated academic program, the Plebes undergo indoctrination to prepare them for taking their place in the Brigade when the entire body of midshipmen returns in September.

LEAVE AND PRIVILEGES

The amount of personal freedom and privilege varies directly with the seniority of the midshipman and the degree of his authority and responsibility. A First Classman (Senior) not only will have more responsibility in the administration of the Brigade but also will have more privileges.

During his first year, the plebe is busy becoming familiar with navy life and learning its customs and traditions. He is expected to participate in intramural sports and become active in as many extracurricular activities as his studies will allow.

There are several regular leave periods for all classes during the academic year. These are Christmas leave, a period of about 2 weeks; end-of-term leave, a 3-day weekend break at the end of the first term in January; spring leave, a period of 3 days usually in late March; and the month-long summer leave of 30 days at the completion of the summer training program.

The regulations governing liberty, a term applied to recreational freedom to differentiate it from leave, which is an authorized leave of absence away from the Naval Academy, are set forth in detail in the Academy Regulations. In general, the liberty privileges for each class are as follows:

First Classmen have privilege of liberty in the Yard and in Annapolis every day, unless duties interfere. They are also privileged to have three weekend liberties each term.

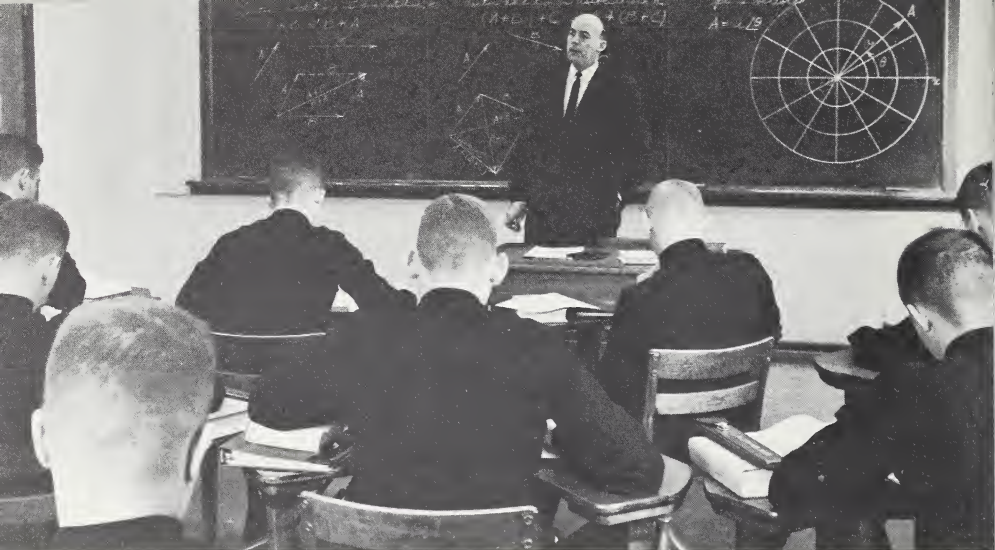
Second Classmen have privilege of liberty in Annapolis on Wednesdays, Saturdays, and Sundays, and Yard liberty during the rest of the week at prescribed times. Second Classmen may select one weekend liberty each term.

Third Classmen have privilege of town liberty Saturdays and Sundays, and Yard liberty on Wednesdays at prescribed times.

Fourth Classmen have privilege of town and Yard liberty on Saturday afternoons, with dining-out privileges on Saturday and/or Sunday with relatives, or close friends. Fourth Classmen are not permitted to escort young ladies or attend dances their first year.



Tecumseh, God of "2.5"—The Naval Academy's Lowest Passing Grade



ACADEMIC ORGANIZATION

The Superintendent, a naval flag officer with wide fleet experience, directs the work of the Naval Academy under the immediate administrative control of the Chief of Naval Personnel. He is assisted by the Commandant of Midshipmen, who is charged with the direct administration of the Brigade of Midshipmen; by the Academic Aide, who supervises the induction, examination, academic instruction, and graduation of midshipmen; and by the Directors of the three major academic divisions, Naval Science, Science and Engineering, and Social Sciences and Humanities. The Superintendent, the Commandant, and the three Directors constitute the Academic Board.

The midshipman's military life and his program of physical education and intramural athletics are carried on under the Commandant of Midshipmen by the Executive and Physical Education Departments.

FACULTY

The Naval Academy faculty is composed of naval officer instructors and civilian professors in approximately equal proportion. Through exchange programs, there are also representatives of the other armed forces and of other colleges and universities on the faculty. A policy of assigning the best qualified instructor for the specific course determines the distribution of the officer and civilian faculty among the academic departments. For example, the Naval Science departments are staffed by officers, whereas the Social Sciences and Humanities

departments have a preponderantly civilian faculty. In 1963 the teaching faculty, exclusive of administrative officials and those in non-academic pursuits, numbered 282 officers and 236 civilians.

Members of the Naval Academy faculty participate in local and national meetings of educational and professional societies. As advisers and coaches, they work closely with the midshipmen in their extracurricular activities. As scholars, they contribute to the literature of their specialties, prepare texts for midshipman instruction, and conduct research projects in this country and abroad.

SCHEDULE OF INSTRUCTION

The calendar year for each Naval Academy class is divided into three terms: summer term, first term, and second term. The academic year consists of the first and second terms, each term generally consisting of 17 weeks of instruction and 1 week of examinations. Midshipmen generally carry about 20 semester hours. The normal academic routine provides for 5½ days of recitations, lectures, laboratory periods, and drills each week. Academic days are divided into six 50-minute periods, Monday through Friday, and four periods on Saturday. During the seventh period, the Brigade participates in military drill on Monday and a dress parade on Wednesday, during the fall and spring. Certain elective courses are taught the seventh period on Tuesdays, Thursdays, and Fridays. A 2½-hour evening study period is provided every evening except Saturday.

At Graduation—Tossing Away their Midshipman Caps.





At the End of Term—Final Exams

The instructional unit is a *section* of about 15 midshipmen. These small sections give each midshipman an opportunity to take an active part in classroom discussion. The high ratio of instructors to students makes it possible usually to assign a maximum of three or four sections to an instructor. As a consequence, considerable individual attention is characteristic of education at the Naval Academy.

THE ACADEMIC PROGRAM

The 4-year program of the Naval Academy is undergraduate in scope and leads to the bachelor of science degree. The basic curriculum consists of 160 semester hours during the 4 academic years, exclusive of summer terms. About one-half of the instruction time is devoted to physical and engineering sciences, one-quarter to the social sciences and humanities, and one-quarter to naval science. The cur-



During Plebe Summer—Library Indoctrination

riculum stresses basic and enduring principles to provide a background for effective leadership.

As a supplement to the basic curriculum, the Naval Academy offers a broad program of elective courses and provision for validation of college-level work successfully completed prior to admission. Qualified midshipmen may undertake advanced undergraduate courses in several major fields of concentration. The overall program assures all midshipmen of the educational benefits of the basic curriculum and at the same time provides the opportunity for fuller development of individual talents.

The awarding of the bachelor of science degree to graduates of the Naval Academy is authorized by the act of Congress approved 25 May 1933, as amended by the act of Congress approved 8 July 1937. The degree is accredited by the Middle States Association of Colleges and Secondary Schools.

The Basic Curriculum

FOURTH CLASS YEAR

<i>First Term</i>	<i>Semester hours</i>	<i>Second Term</i>	<i>Semester hours</i>
M103 Analytic Geometry and Calculus	5	M104 Analytic Geometry and Calculus	5
S101 Chemistry	4	S102 Chemistry	4
E105 Engineering Drawing and Descriptive Ge- ometry	3	E106 Statics	2
H101 Composition and Litera- ture	3	H102 Composition and Litera- ture	3
L101 Foreign Language	3	L102 Foreign Language	3
T101 Physical Education	1	C104 Shipboard Orientation and Fleet Operations	$\frac{3}{4}$
X101 Executive	1	T102 Physical Education	1
		X102 Executive	1
	<hr/> 20		<hr/> 19 $\frac{3}{4}$

THIRD CLASS YEAR

M205 Analytic Geometry and Calculus	5	M202 Mechanics	5
S201 Physics	5	S202 Physics	5
E203 Strength of Materials	3	E204 Engineering Materials	3
H201 Modern European His- tory	3	H202 U.S. Foreign Policy and Geography	3
L201 Foreign Language	$2\frac{1}{2}$	L202 Foreign Language	$2\frac{1}{2}$
T201 Physical Education	$\frac{3}{4}$	C204 Seapower	$\frac{1}{4}$
X201 Executive	1	T202 Physical Education	$\frac{1}{4}$
		X202 Executive	1
	<hr/> 20 $\frac{1}{4}$		<hr/> 20

SECOND CLASS SUMMER: Air-Ocean Environment, $1\frac{1}{4}$ semester hours; Digital Computers, $\frac{1}{2}$ semester hour; Ship Hydro-statics (Buoyancy and Stability), $\frac{1}{2}$ semester hour; Spherical Trigonometry, 1 semester hour; Speech, $\frac{3}{4}$ semester hour. Total, 4 semester hours.

of the U.S. Naval Academy

SECOND CLASS YEAR

<i>First Term</i>		<i>Semester hours</i>	<i>Second Term</i>		<i>Semester hours</i>
M301	Differential Equations	3½	S302	Electrical Science II	4
S301	Electrical Science I	3¾	E306	Fluid Mechanics I	4
E305	Thermodynamics I	4	H302	Economics	2¾
H301	United States Govern- ment	2	C306	Introduction to Mili- tary Psychology and Management	2½
C301	Piloting and Navigation	3½	C308	Navigation	3
W305	Terminal Ballistics	2¼	W306	Target Intercept Analy- sis	2¼
T301	Physical Education	½	T302	Physical Education	½
X301	Executive	1	X302	Executive	1
		<hr/> 20½			<hr/> 20

FIRST CLASS YEAR

S401	Electrical Science III	3	S402	Electrical Science IV	3
E405	Fluid Mechanics II	3	E406	Thermodynamics II	3
H401	Naval History	3½	H402	Advanced Composition and Literature	3¾
C407	Case Studies in Leader- ship and Military Law	2½	C414	Naval Operations II	4½
C411	Naval Operations	3¾	C408	Meteorology	1
W407	Elements of Weapons Systems Dynamics	2½	W408	Weapons Systems Analysis and Syn- thesis	2½
Y401	Naval Hygiene	¾	T402	Physical Education	½
T401	Physical Education	¼	X402	Executive	1
X401	Executive	1			<hr/> 19¼
		<hr/> 20¼			



Consulting on Choice of Electives

THE ELECTIVES PROGRAM

Eligible midshipmen of the three upper classes, and eligible members of the Fourth Class during the second term, are authorized to enroll in elective courses in addition to the courses in the basic curriculum, each midshipman being permitted to enroll in one or more such electives a term. To assist in the planning of a profitable program, a faculty adviser from the appropriate academic department is assigned each midshipman carrying an elective.

MAJOR AREAS OF STUDY

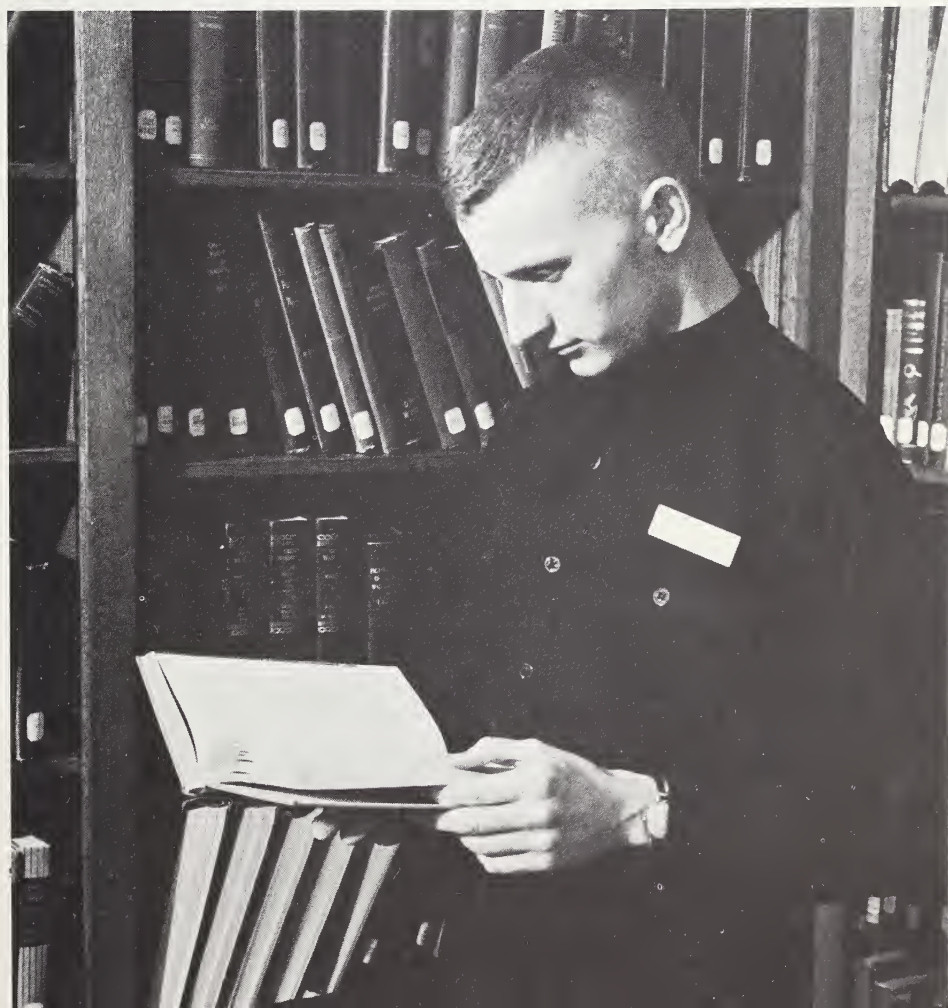
Midshipmen completing appropriate elective studies in an area of concentration may gain sufficient credits in addition to those in the basic curriculum to meet collegiate requirements for a major in that area. The number of semester hours of additional courses required for this purpose vary from 15 to 23 semester hours. Major programs may be undertaken in mathematics, marine engineering, aeronautical engineering, engineering, nuclear science, chemistry, physics, history, social science, foreign language, literature, and systems engineering (weapons).

THE ADVANCED PLACEMENT PROGRAM

Midshipmen of the Fourth Class are allowed to participate in the Advanced Placement Program by validating courses completed prior to entrance which are substantially the same as those in the basic curriculum. Validation is granted on the basis of examination administered by the department concerned and review of previous scholastic high school and college records. *Candidates are encouraged to submit College Entrance Examination Board Advanced Placement test results.*

Midshipmen normally are enrolled in the next sequential course in the department in which they validate. They are expected to fill the vacancy with an elective course during a later year. Each validating midshipman is assigned a faculty adviser to assure that he has the prerequisite courses to undertake the substitute advanced courses and to assist in planning a profitable pattern of elective courses in the future.

Individual Research is Encouraged





Working with Subcritical Nuclear Reactor.

Science and Engineering

Director: Captain James V. Rowney, U.S. Navy

This Division consists of the Mathematics Department, Science Department, and Engineering Department. The academic subjects required within the basic curriculum constitute approximately half of this total curriculum, and are similar in content and treatment to comparable courses at representative engineering colleges and universities. They are designed to implant the basic academic disciplines which will stimulate the midshipman's intellectual interest and appreciation for analytical methods, develop his habits of independent and logical thought, and give him the fundamental scientific competence required in his professional naval studies. Additional elective courses are offered to better prepare the student for specialized professional training and for postgraduate education.

ENGINEERING DEPARTMENT

Head of Department: Captain Wayne Hoof, U.S. Navy

Executive Officer: Commander Donald E. Guhse, U.S. Navy

Senior Professor: Robert M. Johnston

The objective of this department is to provide midshipmen with a course of study designed to give them an understanding of basic engineering concepts and to practice an orderly analytical approach to the problem at hand; in order to develop naval officers who will be capable of using this knowledge as a basis for sound professional judgment and decisions.

The basic curriculum program is strongly supported by materials testing, thermodynamics and fluid mechanics laboratories, including wing tunnel and towing tank. It is further enhanced and developed by a carefully designed departmental electives program which includes studies in nuclear engineering and exercises in the nuclear facility laboratory.

Description of Courses

FOURTH YEAR CLASS

Summer Term

E100 *Introduction to Engineering Practice and Applications.* An introduction to the study of marine and mechanical engineering, through lectures, demonstrations, and examinations of sectioned machinery and models. Demonstrations are conducted in basic shop practices providing overall familiarization with fabrication process from pattern shop through foundry to machine shops. A familiarization with engineering laboratories and laboratory functions in relation to their 4-year engineering curriculum, and an introduction to the needs and requirements in engineering drawing and its techniques and basic principles.

First Term

E105 *Engineering Drawing and Descriptive Geometry.* The introduction to engineering graphical methods and disciplines, with emphasis on spatial visualization providing experience in creative thought and in procedures to convey ideas through graphical communication. Instruction includes the study of both abstract and mechanical forms and their representation in two dimensional mediums by means of freehand and instrument drawing. Topical coverage includes points, lines, planes, and solids in space with representation by orthographic, axonometric, and oblique projections. Engineering applications involve practice in detail and assembly drawings of mechanical components and an introduction to ship's lines drawings. *Three semester hours.*

Second Term

E106 *Statics*. Descriptive geometry, including solution of space problems involving points, lines and planes, parallelism, perpendicularity or angularity of lines and planes and relationships of these to curved surfaces. Treatment of coplanar force systems, moments, couples; equilibrium, free-body diagrams, structures; centroids, moments of inertia of areas, transfer of axes. *Two semester hours.*

E107 *Statics (Advanced Course)*. (May be taken in lieu of but not in addition to E106). This course is designed for validating midshipmen having the necessary proficiency in mathematics. In addition to the topical coverage of E106, the following areas are included: center of gravity, centroids of lines, areas and volumes, beams with distributed loads, dry friction, disc and pivot friction. *Three semester hours.*

THIRD CLASS YEAR

Summer Cruise

During his first cruise, the Third Classman is introduced to the organization of a combatant vessel's Engineering Department and is informed of the kind, purpose, and function of naval main propulsion and auxiliary units.

First Term

E203 *Strength of Materials*. An introduction to the mechanics of engineering materials with emphasis on both their elastic and inelastic behaviors. Classroom work is concerned with axial stress and strains, torsion, combined stresses, Mohr's circle, thermal stresses, shear and bending-moment diagrams, the flexure formula, the equation of the elastic curve, the beam deflections. *Three semester hours.*

Second Term

E204 *Engineering Materials*. A general study of engineering materials—ferrous and nonferrous metals, inorganic nonmetallic materials and organic materials. *Three semester hours.*

SECOND CLASS YEAR

Summer

E300 *Ship Hydrostatics (Buoyancy and Stability)*. A comprehensive laboratory study of the static forces acting on the ship afloat, both in the normal upright condition and in inclined situations, including the effects of weight additions and removals, weight shifts and loose liquids. Stability of the ship is investigated through the use of laboratory models both in the initial condition and throughout the overall range

of stability. Emphasis is given to the nature, importance and limitations of the metacenter, ship's hull form and loading. Analysis of damaged stability including free communication is made with support of large compartmented floodable models and inclining apparatus. *One-half semester hour.*

First Term

E305 *Thermodynamics I.* A first course in thermodynamics emphasizing the classical approaches to and developments from the First and Second Laws, including Clausius inequality, and the Nernst development of the Third Law. The course further includes consequences of the Second Law, available and unavailable energy of thermodynamic systems, properties of gases and vapors, analysis of processes and cycles involving gases and vapors and combustion processes and products, and transfer. *Four semester hours.*

Second Term

E306 *Fluid Mechanics I.* The course covers fluid properties; fluid statics; basic flow concepts; basic equations including conservation of mass, momentum, and energy and the equation of state; dynamic similitude including Reynolds, Mach, and Froude's numbers; viscous effects including the boundary layer, turbulent flow, head loss, drag; frictionless compressible flow; two dimensional ideal fluid flow. *Four semester hours.*

FIRST CLASS YEAR

Summer Cruise

During his second cruise, the First Class midshipman becomes familiar with the organization, facilities, and functions of the Engineering Department of a typical combatant vessel. He learns the duties of a junior officer by standing watches throughout the Engineering

Testing Hull Form in Tow Tank



Department and by exercising the responsibilities of Engineering Division Officer through the administration and instruction of midshipmen.

First Term

E405 *Fluid Mechanics II.* The objective of the course is to demonstrate the application of the basic laws of fluid mechanics and problem solving techniques through selected applications. The course covers measuring of fluid flow; momentum analysis of pumps and turbines; closed conduit flow; subsonic aerodynamics; and hydro mechanics. *Three semester hours.*

Second Term

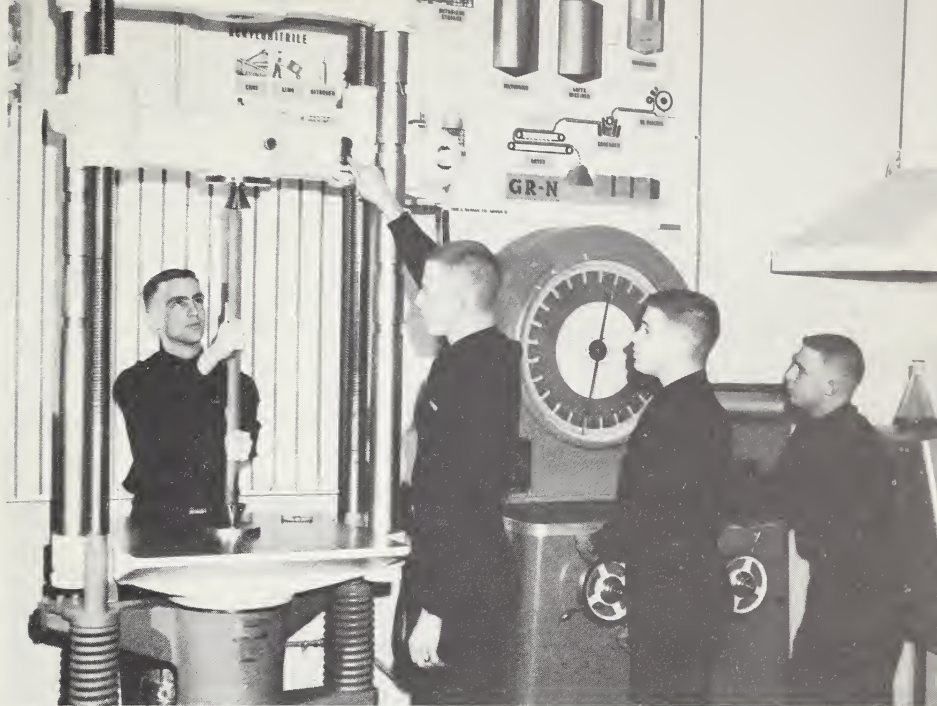
E406 *Thermodynamics II.* Application of principles of thermodynamics to internal combustion engines, gas and steam turbines, compressors and expanders, nozzles and diffusers, and turbo machinery. The course stresses the practical aspects of thermal energy conversion. *Three semester hours.*

ELECTIVE COURSES

E601 *Kinematics.* A study of displacements, velocities and accelerations of machine elements. Topics include Centros and Kennedy's Theorem; accelerations, Coriolis' Law and Glein's Construction with typical applications such as steering mechanisms, Oldham's Coupling and Hooke's Joint; development of plate and cylindrical cam profiles, follower types and displacements; rolling contact through friction gearing of ellipses and hyperboles; cycloidal and involute gear teeth and modifications; gear trains, rack and pinion, worm and wheel, and special devices such as the differential screw, the swash plate and the Geneva wheel. *Three semester hours.*

E604 *Intermediate Strength of Materials.* Topical coverage includes two-material axially loaded members, welded and riveted joints, shear flow, shear center, unsymmetrical bending, statically indeterminate beams, deflection of beams, column formulae and stress and strain at a point. Topics will be treated from both an elastic and an inelastic viewpoint. *Three semester hours.*

E701 *Physical Metallurgy.* A study of the principles of physical metallurgy including the analysis of perfect and imperfect crystalline structures, the concept of equilibrium in the solid state, the study of processes on the solid state, the theory of elasticity and plasticity, and the application of these principles to certain important ferrous and nonferrous alloys. Laboratory work includes heat treatment, materials testing, and metallography. *Three semester hours.*



In the Testing Lab

E702 Systems Engineering. Relationship between the physical system and the differential equation which expresses its behavior. Topical coverage includes first and second order systems, transfer functions for both open and closed loop systems, and frequency response methods. Emphasis is upon mechanical devices. Hydraulic and electrical systems are included to stress analogous nature of all dynamic systems. *Three semester hours.*

E708 Heat Transfer I. An introductory study of engineering heat transfer, with emphasis on conduction and radiation. Topics include the theory of steady-state conduction in one, two and three dimensions; transient conduction; radiation between black surfaces; radiation between gray surfaces; analytical methods, numerical methods, electric analogies. *Three semester hours.*

E709 Reactor Physics I. Fundamental aspects of atomic and nuclear structure are given emphasis. Natural and induced radioactivity, laws of radioactive decay, including a demonstration of half life, binding energy and nuclear stability, compound nucleus, liquid drop model and theory of fission, cross sections including a demonstration of total cross section, Maxwell-Boltzmann distribution of thermal neutrons, center of mass system and laboratory system mechanics, slowing down density, resonance escape probability, thermal utiliza-

tion factor, and the four-factor formula for k (infinite). Brief introduction to the meaning of fermi age and diffusion length, both the physical meaning and the mathematical derivation of these probabilities of nonfast and nonslow leakage of neutrons. Material and geometric buckling. Finally, the diffusion equation and the critical equation applied to a thermal reactor. *Three semester hours.*

E710 *Reactor Physics II.* The interaction of nuclear radiations with matter involving alphas, betas, and a basic mathematical approach to the photoelectric effect, Compton scattering, and pair production of gamma radiations. Health physics and the biological effects of radiation. Radiation detection and measurement. Basic attenuation of radiations exponentially and by the inverse square laws. Laboratory work in the nucleonics laboratory involving basic training with scalers, flux mapping of the sub-critical assembly both with foils and the BF_3 prob. *Three semester hours.*

E801 *Naval Architecture—Hydrostatics.* Hull form types; ship geometry, nomenclature, and hydromechanic parameters; form coefficients; hull form delineation; fairing and lofting practices. Form calculations; methods of determining areas, volumes, moments. Computations for displacement, center of buoyancy, center of gravity, and wetted surface. Preparation of hydrostatic curves; floodable length curves; watertight subdivision. *Three semester hours.*

E802 *Naval Architecture—Hydrodynamics.* A basic study of ship's hydrodynamics with particular emphasis upon flow phenomena and surface resistance, including the concepts and problems associated with submerged control surfaces, hydrofoils, and propeller theory. Laboratory work includes exercises and calculations on towing tank calibration, model resistance, Taylor's Standard Series, determination of Shoenheer Line and effective horsepower, controlled-wave resistance testing, and hydrofoil model computations. *Three semester hours.*

E803 *Aerodynamics I.* An introductory study of the aerodynamics of powered flight; the mechanics of flight, pressure distribution and lift, boundary-layer effects, compressibility in subsonic flow, shock wave analysis and wave combinations. Laboratory work includes exercises and calculations such as wind tunnel calibration, pressure distribution on an airfoil, drag on characteristic shapes, plan-form influence, and wake momentum survey. *Three semester hours.*

E804 *Aerodynamics II.* A continuation of Aerodynamics I including thin airfoil theory, sweepback and transonic effects, propeller analysis, airplane performance, maneuvering flight, and elements of stability. Laboratory work includes exercises and calculations on section characteristics, drag buildup, and static stability; together with moving

pictures and lectures on compressible subsonic, transonic, and supersonic effects; shock waves, drag rise, and area rules. *Three semester hours.*

E805 *Heat Transfer II.* A continuation of Heat Transfer I, with emphasis on convection. Topics include principles of fluid dynamics necessary for the study of convective heat transfer; free convection; forced convection through and over tubes; heat exchanger design; aerodynamic heating; mass transfer. *Three semester hours.*

E807 *Gas Power Propulsion I.* An introduction to the dynamics, thermodynamics, and thermochemistry of gas power propulsion, including: molecular characteristics of gases, thermodynamics of compressible flow and combustion processes, thermochemical equilibrium and analysis of gaseous combustion products with dissociation. *Three semester hours.*

E808 *Gas Power Propulsion II.* Thermodynamic and thermochemical analysis of ideal and real gas power propulsion cycles, including: gas turbine (open and closed, including laboratory analysis), ramjet, turbojet, pulsejet, turboprop, liquid and solid fueled rocket. *Three semester hours.*

SM902 *Science Research Project.* A creative, scientific research project in the field of the student's interest, approved by the science research adviser in the cognizant department. The project may be undertaken only by those in the third year of participation in the Advanced Science and Mathematics Seminar. *Three semester hours.*



Mathematics is the
Language of Science

MATHEMATICS DEPARTMENT

Head of Department: Captain Edgar A. Robie, U.S. Navy

Executive Officer: Commander Albert A. Folop, U.S. Navy

Senior Professor: Livingston H. Chambers

This department develops in the midshipmen the fundamental skills of trigonometry, analytical geometry, calculus, mechanics, differential equations, and selected modern topics, with their application to analysis of mechanical, electrical, and fluid phenomena which are basic to the solution of naval technical problems. There are special sections for superior students in calculus, mechanics, and differential equations.

Description of Courses

FOURTH CLASS YEAR

Summer

*Plane Trigonometry.*¹ Definition of trigonometric functions of any angle, numerical value of functions of special angles, identities; slide rule solution of right triangles; functions of related angles; radians, graphs; functions of composite angles; law of sines, law of cosines; inverse trigonometric functions; trigonometric equations.

First Term

M103 *Analytic Geometry and Calculus.* College algebra: inequalities, complex numbers and theory of equations. Analytic geometry and calculus: concept of function; graphs of functions; limits and continu-

¹ For those midshipmen not offering trigonometry upon entrance.

ity; the derivative of a function; differentiation of algebraic, trigonometric and inverse trigonometric functions; applications of the derivative to velocity, acceleration, maxima, minima and related rates. The integral concept; the mean-value theorem; applications of the definite integral to area. Topics from analytic geometry including the straight line, conic sections, parametric representation; translation and rotation of axes are incorporated in an orderly development of the calculus. *Five semester hours.*

Second Term

M104 *Analytic Geometry and Calculus.* Differentiation of logarithmic and exponential functions; techniques of integration; applications of the definite integral to arc length, volumes, surface area, moments of mass distributions, centroids; polar representation; vectors; vector algebra; differentiation of vector functions; vector treatment of motion on a curve. *Five semester hours.*

THIRD CLASS YEAR

First Term

M205 *Analytic Geometry and Calculus.* Analytic Geometry and mean-value theorem and indeterminate forms, improper integrals, Newton's method; infinite series, including MacLaurin's and Taylor's series for expansion of functions; partial differentiation; multiple integrals and applications to area, volume, centroids, moments of inertia, etc.; separable differential equations of first order, linear differential equations with constant coefficients; applications to physical sciences.

Probability and Statistics. Probability; testing of hypothesis; frequency distributions, moments; probability distributions. *Five semester hours.*

Second Term

M202 *Mechanics.* Vector algebra including scalar and cross products; forces, couples and moments; statics of a particle and a rigid body; vector calculus; kinematics of a particle and a rigid body; dynamics of a particle and a rigid body; work and energy principle; impulse and momentum principle. *Five semester hours.*

SECOND CLASS YEAR

Summer

M300 *Spherical Trigonometry.* Geometry of the sphere; derivation of fundamental formulas; solution of right spherical triangles; orthographic projection; solution of oblique spherical triangles; application to terrestrial and celestial spheres. *One-half semester hour.*

First Term

M303 *Differential Equations.* Fundamental concepts; first order differential equations; linear differential equations; simultaneous differential equations; series solution of differential equations; partial differential equations; boundary value problems; Fourier series; applications. *Three and one-half semester hours.*

ELECTIVE COURSES

M502 *Fundamentals of Mathematics.* Logic, the number system, logic of algebra, mathematical induction, cardinal numbers, groups. *Three semester hours.*

M601 *Matrix Theory.* Algebra of matrices; transformations; bilinear forms; rank; systems of linear equations; quadratic forms; linear vector spaces; determinants; characteristic matrix. Prerequisite: M102 or M104. *Three semester hours.*

M602 *Modern Algebra.* Fundamental concepts; sets, relations, operations; rings; integers; fields; number fields; rational numbers, real numbers, complex numbers; groups; algebra of matrices. Prerequisite: M102 or M104. *Three semester hours.*

M604 *Numerical Analysis.* Practical solution of algebraic and transcendental equations; finite differences and their applications; numerical integration of initial value problems; numerical integration of ordinary boundary value problems. *Three semester hours.*

M606 *Probability and Statistics II.* Sampling theory; analysis of pairs of measurements; theoretical frequency functions for correlation and regression; the chi-square distribution; small sample theory (student's-t and F distribution); general principles for testing hypotheses and for estimation; nonparametric methods. *Three semester hours.*

M608 *Vector Analysis.* The geometry and algebra of vectors; vector calculus and the elements of the theory of vector fields; line and surface integrals; Stoke's and Gauss' theorems and their consequences; applications to geometry and dynamics used throughout to illustrate the methods developed. *Three semester hours.*

M650 *Differential Equations II.* Similar to M303 but with extended coverage of applications of differential equations, series solutions of differential equations and partial differential equations. May be taken in lieu of but not in addition to M303. *Four semester hours.*

M712 *Advanced Calculus I.* The number system; sequences and series; functions of one variable; functions of several variables; vectors. *Three semester hours.*

M751 *Engineering Mathematics I.* Definite integrals: improper integrals, Gamma and Beta functions, differentiation and integration under the integral sign; power series; series solutions of second-order differential equations; Bessel functions and applications; boundary value problems; vector analysis; gradient, curl, divergence, line, surface, and volume integrals. *Three and one-half semester hours.*

M752 *Engineering Mathematics II.* Laplace transformation and selected supporting topics from complex variable (analytic functions, residues, etc.). *Three semester hours.*

M802 *Introduction of Complex Variable.* Analytic functions: elementary functions; integrals; series; residues and poles; conformal mapping and applications; analytical continuation; Riemann surfaces. *Three semester hours.*

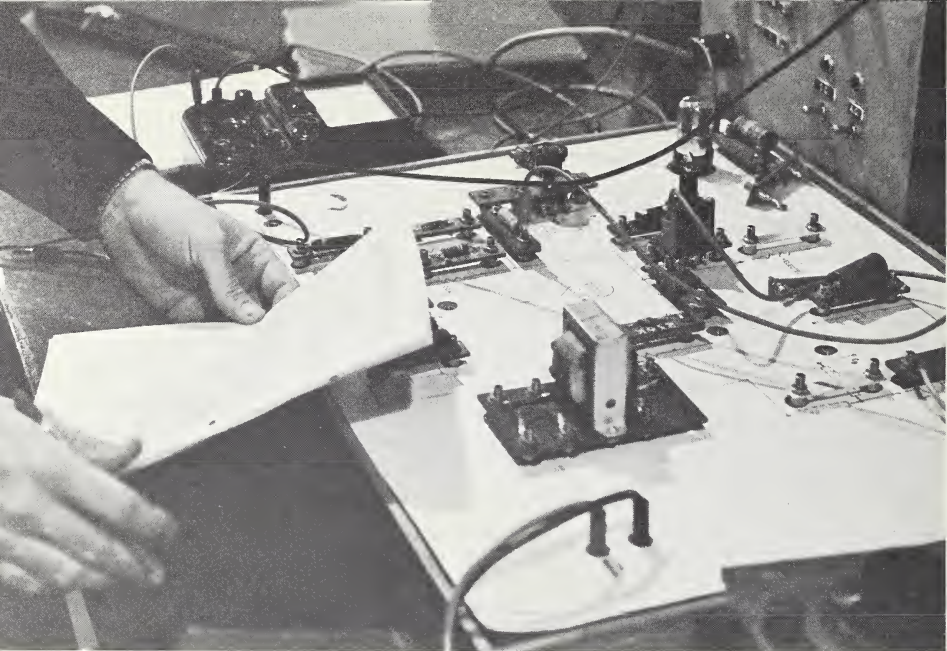
M803 *Advanced Calculus II.* The definite integral; improper integrals; line integrals; multiple integrals; uniform convergence; Fourier series and integrals. *Three semester hours.*

M861 *Linear Algebra.* An abstract treatment of vector spaces and linear transformation with application to algebra, analysis and geometry. *Three semester hours.*

M862 *Advanced Differential Equations.* A modern treatment of existence, uniqueness, oscillation, and comparison theorems. The theory of stability of solutions. Series developments and eigenvalue expansions for self adjoint equations. *Three semester hours.*

M864 *Topology.* Topics to include sets and functions, metric spaces, topological spaces, compactness, separation, connectedness, Stone-Weierstrauss theorems, and an introduction to Banach and Hilbert spaces. *Three semester hours.*

SM902 *Science Research Project.* A creative, scientific research project in the field of the student's interest, approved by the science research adviser in the cognizant department. The project may be undertaken only by those in the third year of participation in the Advanced Science and Mathematics Seminar. *Three semester hours.*



SCIENCE DEPARTMENT

Head of Department: Commander Jack S. Laney, U.S. Navy

Executive Officer: Commander Robert A. Swensen, U.S. Navy

Senior Professor: Dr. Edward J. Cook

The Science Department presents the fundamental concepts of chemistry, physics, electrical engineering, and electronics, their application to present and future technology, and use of analytical methods in the solution of appropriate problems.

Description of Courses

FOURTH CLASS YEAR

First and Second Terms

S101 & 102 Chemistry. Fundamentals of chemical theory with a study of the properties of metals and nonmetals. Among specific topics studied in *chemical theory* are the laws of chemical change, atomic structure and the periodic table, kinetic-molecular theory and the gas laws, solutions, chemical equilibrium, ionization, electrochemistry, radioactivity, nuclear reactions and nuclear energy from fission and fusion reactions. *Metals* studied include the alkali and alkaline earth metals, aluminum, and iron. *Nonmetals* studied are limited to oxygen, hydrogen, halogens, nitrogen, and sulfur families, carbon, and simple

carbon compounds. *Naval applications* include batteries, corrosion, water treatment, explosives, chemical warfare, the atomic bomb, the hydrogen bomb, and nuclear power plants for propulsion. Laboratory work includes both descriptive and quantitative experiments, and a brief introduction to the principles of semimicro qualitative analysis. *Eight semester hours.*

THIRD CLASS YEAR

First and Second Terms

S201 & 202 *Physics.* Fundamental physical quantities, velocity and acceleration, Newton's laws of motion, energy and power, conservative forces, conservative fields, impulse and momentum, collisions, kinetic theory, temperature, heat, flow of electricity, magnetic fields, rotational motion, conservation of angular momentum, harmonic motion, waves, interference of waves, standing waves, diffraction, Doppler, reflection, refraction, sound, electromagnetic induction, electromagnetic waves, polarization, relativity, Michelson-Morley experiment, mass and energy, elementary particles, particles and waves, atomic structure, quantum theory, nuclear forces, ranges, absorption, detection, radioactivity, nuclear reactions. *Ten semester hours.*

SECOND CLASS YEAR

First Term

S301 *Electrical Science I.* Fundamental concepts of electric and magnetic fields. Laws of the electric circuit and introduction to network analysis. Principles of electrical measurements. R, L, C, and M as fundamental circuit parameters, transients; alternating currents and voltages; phasor representation and complex algebra; single phase transformers. *Three and three-quarters semester hours.*

Second Term

S302 *Electrical Science II.* Theory and principles of electronics. Fundamentals of electron emission and ballistics in vacuum and gas-filled tubes; tuned circuits and filters; transients and wave-shaping circuits; voltage stabilizers; transistors; radio and audio frequency amplifiers; cathode ray tubes and oscillographs. *Four semester hours.*

FIRST CLASS YEAR

First Term

S401 *Electrical Science III.* Electronic systems, oscillators, modulation, transmitters, transmission lines, receivers, antennas and wave propagation, data transducers. *Three semester hours.*

Second Term

S402 *Electrical Science, IV.* Polyphase circuits, magnetic circuits, electromechanical energy conversion, equivalent circuits, control systems. *Three semester hours.*

ELECTIVE COURSES

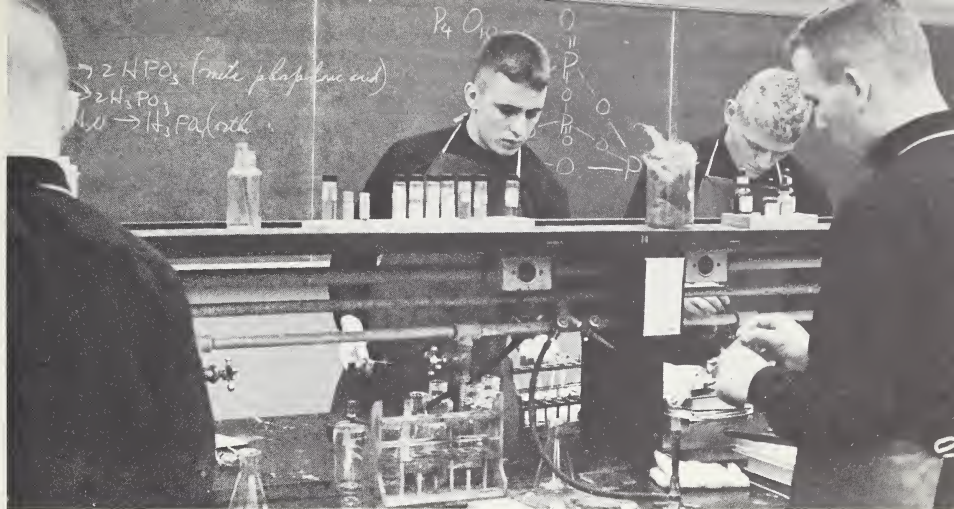
S605 & 606 *Organic Chemistry.* A study of the principles of organic chemistry, including the fundamental concepts of energy relationships, resonance, dipole moments, ionic character in covalent bonds and relative electronegativities of atoms and radicals, and the new areas of organic chemistry including high energy fuels, synthetic motor fuels, explosives, synthetic rubber, high polymers, detergents and "wonder" drugs. Two lectures and two 3-hour laboratories. *Eight semester hours.*

S701 & 702 *Atomic and Nuclear Physics.* Same as S701A & S702A without laboratories.

S701A *Atomic Physics.* Three recitations each week are devoted to a study of the basic experimental facts pertaining to atomic phenomena and an introduction to the theories developed to give a coherent interpretation of those phenomena. Classical concepts are used as a basis and the theory of relativity and quantum mechanics are introduced as needed in the study of kinetic theory, electronics, black-body radiation, atomic structures, spectra, and X-rays. The laboratory work will consist of a study of the theory and propagation of errors and analysis of data, and the performance of classical experiments in modern physics, such as the Franck-Hertz experiment, Planck's constant from the photoelectric effect, and the Millikan oil drop experiment. Three recitations and one 2-hour laboratory. *Four semester hours.*

S702A *Nuclear Physics.* This course is a study of the basic experimental facts pertaining to those phenomena which are purely nuclear in origin and their interpretation in terms of contemporary quantum theory to obtain a coherent understanding of the nuclear force problem. Included subjects are: basic nuclear properties, interaction of radiation with matter, nuclear instruments, radioactivity, nuclear reactions, nuclear structure, and elementary particles. Some typical laboratory experiments are on the subjects of nuclear magnetic resonance, statistics of random events, scintillation counting and pulse height analysis, and nuclear emulsions. Three recitations and one 2-hour laboratory. *Four semester hours.*

S704 *Principles of Underwater Acoustics.* This course is approximately one-half basic principles of acoustics which are necessary to a



study of underwater sound, and one-half application of these principles to underwater sound problems. Topics include oscillations, plane and spherical waves, radiation patterns, reflection coefficient, attenuation, velocity, ray theory, wave theory, scattering, reverberation, fluctuations, echo ranging and noise. *Three semester hours.*

S705 *Principles of Optics.* Geometrical and physical optics. Topics studied are optical instruments, aberrations and their correction, interference, diffraction, polarization, and scattering. The electromagnetic theory of radiation is introduced, and the principles of optics are applied to radar, infrared, ultraviolet, X-rays, and other types of radiation. *Three semester hours.*

S707 & 708 *Advanced Undergraduate Laboratory.* Physics. A laboratory course on the junior-senior level. Consideration is given to the statistical treatment of experimental data and the proper presentation of results. The experiments are drawn mostly from modern physics, acoustics, optics, and electricity. Two 2-hour laboratory periods each week. *Three semester hours.*

S709 *Electromagnetic Waves.* The course proceeds from a study of electric and magnetic fields, in which vector analysis is employed, to a consideration of Maxwell's equations and the radiation of electromagnetic waves. Boundary conditions and the propagation phenomena of reflection, refraction, interference, and diffraction are treated in some detail, and wave guides, transmission lines, and radiating systems are introduced. *Three semester hours.*

S710 *Electromagnetic Waves.* Same as S709, Second Term. *Three semester hours.*

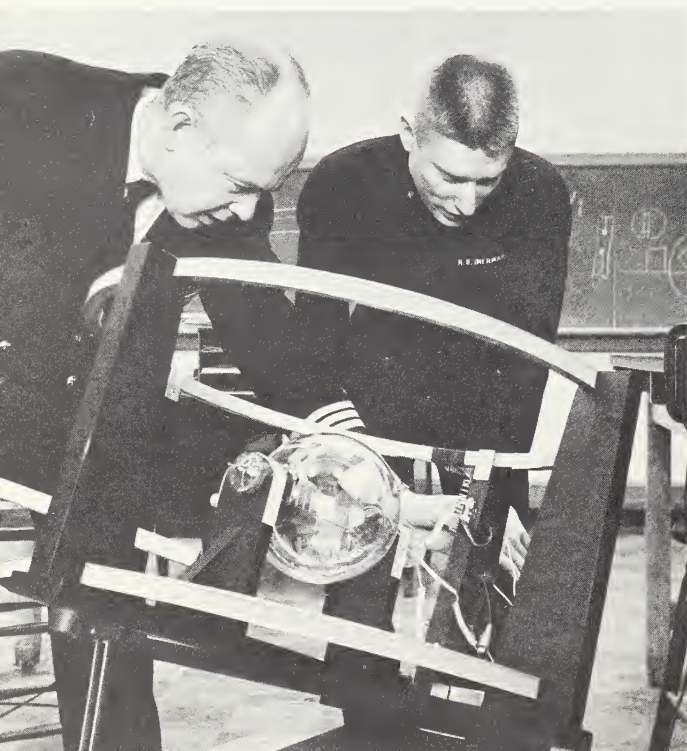
S711 *Introductory Solid State Electrical Science.* An introduction to the theory of a wide variety of solid state phenomena which are directly and indirectly applied in modern electronics. Structure and behavior of metals, conductivity and ferromagnetism Band theory of semiconductors; transistor devices. Gaseous conduction. *Three semester hours.*

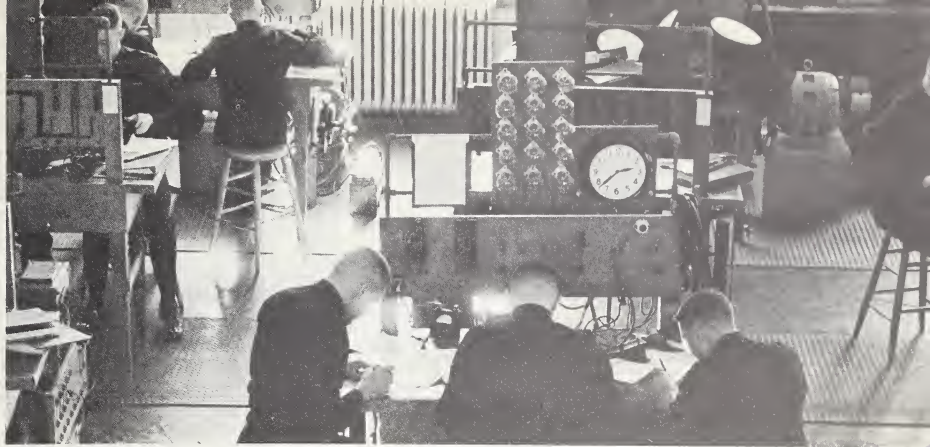
S713 *Advanced Inorganic Chemistry.* A study of the fundamental concepts of inorganic chemistry. Topics to be covered will include the following: atomic binding forces; complex ions and coordination compounds; reactions in aqueous and nonaqueous media; radioactivity and nuclear transformations. *Three semester hours.*

S714 *Analytical Chemistry.* A survey of the theory, principles, and application of volumetric and gravimetric quantitative methods in the separation and determination of typical inorganic constituents. Some theory and application of modern optical and electrical instruments in the solution of chemical problems. *Four semester hours.*

S801 *Electric Circuit Analysis.* A study of communication circuits, network theorems, modal and mesh equations, filters and transmission lines. *Three semester hours.*

S802 *Transient Analysis of Linear Systems.* A study of electrical transients in linear networks using classical and Laplace transform methods. *Three semester hours.*





S806 *Neutron Physics.* A study of the production and reactions of neutrons. Among the topics considered are the emission, moderation, diffusion, and absorption of neutrons. Measurements, such as those on neutron distribution, scattering, absorption, and reflection coefficients will make use of the subcritical assembly and associated equipment. Two lectures and one 2-hour laboratory. *Three semester hours.*

S807 *Introduction to Quantum Mechanics.* An introductory study of Quantum Mechanics with emphasis on the physical principles involved. Topics to be covered are as follows: Basic postulates, solutions of the Schroedinger wave equation for special cases in one and three dimensions, perturbation theory, Pauli exclusion principle, relativistic wave equation and origin of electric spin. *Three semester hours.*

S811 & S812 *Physical Chemistry.* An introduction to such topics as: Physical states of matter, kinetic theory of gases and liquids, the first and second law of thermodynamics, free energy, and spontaneity of chemical reactions, phase equilibrium, properties of solutions, chemical kinetics, electrochemistry, elementary quantum theory, and atomic and molecular structure. *Four semester hours each term. (Three recitations and one 3-hour lab period per week.)*

SPECIAL ELECTIVE COURSE

The following course is offered under the cognizance of the Director of Science and Engineering:

SM902 *Science Research Project.* A creative, scientific research project in the field of the student's interest, approved by the science research adviser in the cognizant department. The project may be undertaken only by those in the third year of participation in the Advanced Science and Mathematics Seminar. *Three semester hours.*



Social Sciences and Humanities

Director: Captain Lloyd V. Young, U.S. Navy

From its inception, the Navy has recognized that its officers must be able to express themselves effectively, have an appreciation of national and international interests that may become matters of professional naval concern, and prove capable of serving their country at home, on the high seas, and abroad. The Departments under the Director of Social Sciences and Humanities conduct courses that will prepare midshipmen to fulfill those aspects of his role as a naval officer. Trends, developments, forces, causes and effects, reasoning and judgment are stressed, as well as ability in the basic language skills, English and foreign. The grouping of the humanistic studies at the Naval Academy permits careful integration of the program of studies with particular attention to the midshipman's written and oral English throughout the 4 years.

ENGLISH, HISTORY, AND GOVERNMENT DEPARTMENT

Head of Department: Captain Charles J. Merdinger (CEC), U.S. Navy

Executive Officer: Commander William C. Chapman, U.S. Navy

Senior Professor: Dr. William W. Jeffries

The mission of the English, History, and Government Department is to educate the midshipman as a discriminating individual with an understanding of history, government, economics, and literature, and to develop in him a mature ability—

- to read with comprehension and appreciation,
- to write with clarity and style, and
- to speak with conviction and poise.

Description of Courses

FOURTH CLASS YEAR

Summer Term

H100 *Naval History: Traditions and Leadership.* Familiarization with the library and drill in the use of its facilities; selected reading; reading assignments in naval history and traditions, with supplemental lectures, and an examination.

First and Second Terms

H101 & 102 *Composition and Literature.* Primary emphasis is on developing efficiency in reading and in oral and written communication. Reading and discussion of selections from major American writers (first term) and major British writers (second term), with frequent quizzes. Weekly themes based on the readings and exemplifying basic forms of exposition: Definition, classification, analysis, argument, criticism, comparison and contrast, etc. Individual conferences on composition in class. Practice in the use of the dictionary, social and naval correspondence, and public speaking. Library visits, with drill in research techniques. *Six semester hours.*

H103 & 104 *Composition and Literature, Advanced Course.* This course is designed for midshipmen with exceptional aptitude for composition and literature. The general objectives are the same as those of the basic course except that there is more emphasis on critical writing. The major types of American and English literature are studied in the first and second terms respectively. These major types are represented by complete works of outstanding men of letters. *Six semester hours.*

THIRD CLASS YEAR

First Term

H201 *Modern European History.* The objective of the course is to give the midshipmen a knowledge of European historical development and overseas impact of events in Europe since 1789. Lectures and collateral readings broaden the scope of the textbook. *Three semester hours.*

Second Term

H202 *U.S. Foreign Policy and Geography.* The course objective is to teach the midshipmen the diplomatic history of the United States and the principal aspects of past and present U.S. foreign policies. The lessons in geography are designed to develop an appreciation of geographic forces in world affairs. *Three semester hours.*

SECOND CLASS YEAR

Summer

H300 *Speech.* This course will emphasize speech composition and platform performance with the general objective being to improve the midshipmen's proficiency in oral expression. Attention will be paid to *ex tempore* speaking, debate technique, basic elements of parliamentary law, conference procedures, and particularly to presentations and briefings. *One semester hour.*

First Term

H301 *U.S. Government.* The objectives of this course are: (1) to implant in the midshipmen an understanding of the basic concepts of American democracy; (2) to establish an understanding of the Constitution; (3) to familiarize the student with the structure and functions of his government and the forces and factors which influence its operation; and (4) to compare his government with other types of government. *Two semester hours.*

Second Term

H302 *Economics.* Laws of economic behavior, American economic institutions, the role of government in the economy in peace and war, elements of personal finance. *Two and three-quarters semester hours.*

H304 *Economics, Advanced Course.* This course is designed for midshipmen who have demonstrated particular proficiency in the social sciences. The objectives are similar to those of the basic course, but the level of analysis is commensurate with the superior abilities of the students. Some emphasis is given to economic methodology and to the history of economic thought. *Two and three-quarters semester hours.*

FIRST CLASS YEAR

First Term

H401 *Naval History.* The objective of this course is to provide the midshipmen with information basic to their profession concerning: (1) the development of naval ships and weapons; (2) the evolution of naval tactics and amphibious doctrine; (3) the reasoning behind historic strategic decisions; (4) the influence of sea power upon history; and (5) the qualities of character and professional competence which have made great naval leaders. *Three and one-half semester hours.*

Second Term

H402 *Advanced Composition and Literature.* The objective of this course is to develop the midshipman's intellectual maturity: (1) by exploring some of the problems of human existence; (2) by deepening

his understanding of human personality; (3) by sharpening his perceptions of literary values through writings and discussion; and (4) by improving his powers of oral and written expression. Course work involves the reading and the discussing of at least five masterpieces selected by the instructor from world literature, past and present. The readings and the discussions in any one class section are related to a single thematic objective. *Three and three-quarters semester hours.*

First and Second Terms

Research Paper. The research paper project is designed to introduce the midshipmen to the scientific method of analyzing the materials of history, to familiarize them with research methods, and to require of them an extended piece of individual work in which they combine their knowledge of history and their skill in composition. The research paper project begins early in the first term and extends well into the second.

After-Dinner Speaking. Throughout First Class year, small dinners are given under the auspices of the English, History, and Government Department, with the primary objective of providing a setting for midshipmen to deliver after-dinner speeches under realistic circumstances. Guests of honor and faculty members are present. Each member of the First Class participates in at least two of these dinners.



ELECTIVE COURSES

H502 *Readings in the Literature of Democracy.* A study of selections of literary merit dealing with ideas basic to democratic government: books, tracts, essays, letters, documents, speeches, and public pronouncements. Literary qualities of the selections are emphasized. This course carries credit leading to a major in either Literature or Social Studies. *Three semester hours.*

H601 *Modern American Literature.* Readings from the major writers of American fiction, poetry, and the drama since 1920. Especial attention to representative works of such authors as Hemingway and Faulkner, Eliot and Frost, O'Neill and Williams. *Three semester hours.*

H602 *Modern British Literature.* Readings from the major writers of British fiction and poetry, since 1900. Especial attention to representative works of such authors as Conrad, Joyce, Huxley, Waugh, Greene, and Cary. *Three semester hours.*

H604 *Classical Literature.* This course is designed to give the midshipmen an introduction to the important literature of classical Greece and Rome, such as the works of Homer, Sophocles, Virgil, and Ovid. Some emphasis is also placed on the mythology and religion of the age. *Three semester hours.*

H605 *U.S. History.* A survey of the principal political, economic, and social ideas and institutions of the American people since 1789. Attention is also paid to geographical considerations, religious currents, progress in literature and the arts, and the development of foreign policies. Emphasis is placed upon achieving a broad picture of the foundations of current attitudes toward domestic problems and foreign affairs and upon the characteristics of the democracy which American military personnel are sworn to defend. *Three semester hours.*

H606 *History of Russia.* A chronological introduction to the political, cultural, social history of Russia from the founding of the Moscow principality through its expansion into the present Soviet Union. The growth of national consciousness, drive, and objectives will be emphasized, together with the factors fostering the anomalous survival of the principle of autocracy from the 13th century Mongol invasion. *Three semester hours.*

H607 *History of Europe, 1500-1815, from Renaissance through Napoleon.* A survey course in which the following major developments will be studied: the rise of Spain, England, and France as national states, the development of absolute monarchy, the era of oceanic exploration and



Delegates From Seventy Colleges Attend Annual Naval Academy Foreign Affairs Conference

of overseas colonization, the rise of capitalism, the Protestant Revolt or Reformation, the Scientific Revolution, the development of constitutional government, the rise of Russia and Prussia, the French Revolution and Napoleon. Readings presenting differing points of view will be used as a basis of discussion. *Three semester hours.*

H609 *U.S. Economic History.* A study of the American economy from colonial times to the present, with special emphasis on the inter-relations between the ways Americans have made a living and their social and political attitudes, on America's role in the world economy, and on the rise of the large corporation. *Three semester hours.*

H703 *The World Since 1914.* This course emphasizes the backgrounds and causes of World Wars I and II, the development of totalitarianism, the failure of collective security in the interwar period, the diplomacy of coordination during World War II, the United Nations, and significant trends in the Far East, Middle East, Africa, and Europe after World War II. *Three semester hours.*

H704 *Comparative Government and Comparative Economic Systems.* A comparative study of the governments of England, France, Russia, China, and India, with full attention to civil rights and economic controls as well as the machinery of government. The approach is dynamic rather than static. The implications of the various philosophies of government in foreign relations are considered. *Three semester hours.*

H706 *Communism: Theory and Practice.* A study of the philosophy of Communism from the writings of Engels, Marx, Lenin, and Stalin; history of the Internationals; the role of the Comintern and the "international party"; relations of the Soviet Union with radical parties outside Russia, and with European Social Democratic parties; policies in the satellite nations; the security problem in the Western democracies. *Three semester hours.*

H708 *The Far Eastern Relations of the United States.* A consideration of the development of the diplomatic, cultural, and economic relations of the United States and the Far East. Special emphasis is placed on developments since 1850, particularly upon the interaction of the foreign policies of the United States with those of the major Far Eastern powers as the latter were stimulated by imperialism, nationalism, industrialism, democracy, and Communism. *Three semester hours.*

H709 *Political Theory.* The philosophic bases of the various forms of government, with emphasis on the roots of democracy; the political writings of Plato, Aristotle, St. Thomas Aquinas, Hobbes, Locke, Montesquieu, Hamilton, Jefferson, Madison, Hegel, Nietzsche, Pareto, Wilson; the great documents—Magna Carta, the Declaration of Independence, the U.S. Constitution, the Atlantic Charter, etc.; legal codes; the Common Law. *Three semester hours.*

H710 *Modern Middle Eastern History and Problems.* This course is designed to provide an understanding of the current international tensions and problems centered in the Middle Eastern area. A thorough grounding will be given in the essential elements of Middle Eastern history, culture, and sociology, and then the problems of internal and international political tensions in the area will be studied in detail. Special emphasis will be placed upon problems of naval and diplomatic importance including Middle East Oil and the penetration of Soviet influence into the area. *Three semester hours.*

H711 *Major British Writers, 14th–18th Centuries.* Intensive study of selected works of principal figures in the literature of England: Chaucer, Spenser, Milton, Pope, and Johnson; their thought and art, their historical background, their significance as representatives of their times, and their contributions to the culture of the English-speaking nations. *Three semester hours.*

H712 *Major British and American Writers, 19th and 20th Centuries.* Intensive study of selected works of principal figures in the literature of England and the United States in the 19th and 20th centuries: Wordsworth, Emerson, Hawthorne, Melville, Dickens, Tennyson, Browning, Poe, Whitman, Joyce, and Eliot; their thought and art, their historical

background, their significance as representatives of their times, and their contributions to the culture of the English-speaking nations. *Three semester hours.*

H713 *Shakespeare and His Contemporaries.* Intensive study of the major dramatic works of Shakespeare against the background of Tudor and Stuart life and literature, especially the plays of Shakespeare's fellow dramatists of the English Renaissance. Special consideration of Shakespeare's thought, dramatic development, and literary stature, particularly as revealed by comparison of his plays with the dramatic works of his contemporaries. *Three semester hours.*

H801 *Advanced Economics and Problems of Defense Planning.* Intermediate level economic analysis, with emphasis on policy problems in war and cold war: production and manpower programing, allocating of materials, stockpiling, wage and price controls, rationing, wartime fiscal and monetary policies. *Three semester hours.*

H803 *Introduction to Philosophy and Logic.* A brief study of the problems and methods of philosophy and the solutions suggested by various philosophers. Included is a nontechnical introduction to the analysis of deductive and inductive reasoning, sound definition, and logical fallacies. *Three semester hours.*

H805 *History of Latin America.* A survey designed to provide reasonable familiarity with the origins and growth of our southern neighbors. The complex threads of independence won by vicerealties, fragmentation by nationalism, and the rise of national leaders will be subordinated in emphasis to the development of the forces shaping Pan-Americanism. The significance for Latin America, the United States, and the world of the ideal of *La Patri Grande* will be explored. A reading knowledge of Spanish or Portuguese is desirable but not required. *Three semester hours.*

H806 *Elements of Law.* Introduction to jurisprudence. The essentials of the law of crimes, contracts, torts, agency, real and personal property, domestic relations, testaments, negotiable instruments, and taxation, with a view of familiarizing the student with those branches of the law he is most likely to encounter in his role as a citizen and officer of the Armed Forces. *Three semester hours.*

H807 *International Relations.* This course deals with the present-day problems confronting U.S. diplomacy in Europe, the Far East, the Middle East, and Latin America. It provides extensive opportunity for the study of policy as well as appropriate diplomatic strategy to be applied as possible solutions to the problems. *Three semester hours.*

H808 *U.S. Military History and Policy.* A survey of U.S. military history and policy from colonial times to the present. It provides extensive opportunity to analyze major land and pertinent sea campaigns, problems of logistics, the implementation of national policy by the military forces and the relationship between the U.S. military staffs and the civil government, the effect of air power on strategy and concepts of nuclear warfare. *Three semester hours.*

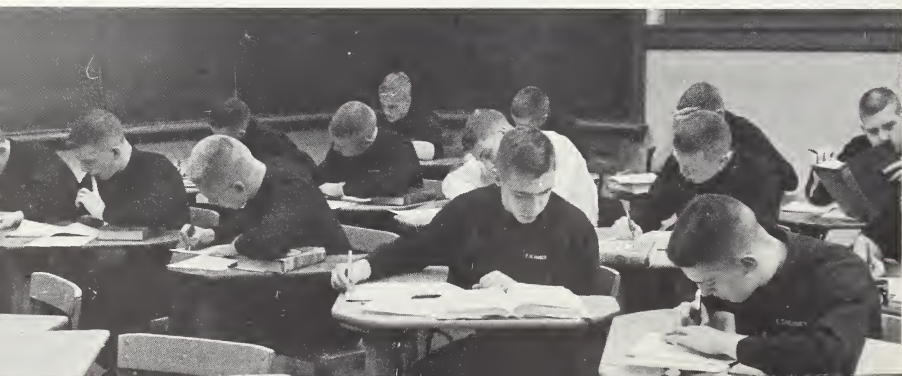
H810 *Economics of Labor Relations.* This course is designed to give the midshipman a general survey of the field of labor relations. A study is made of labor history in the United States, the organization of unions, the economics of the labor market, and the relationship between government and labor. Special attention is given to labor-management relations and current problems. *Three semester hours.*

H901 *Seminar in Literature I (Representative Contemporary Novelists).* Intensive study of selected works of six modern novelists, Moravia, Camus, Silone, Faulkner, Greene and Malraux, as representatives of contemporary points of view on the political, social and ethical problems of the 20th century. Discussions, collateral readings, reports, individual reading projects. *Three semester hours.*

H902 *Seminar in Literature II (Representative Contemporary Playwrights, Poets or Short Story Writers).* Intensive study of modern drama, poetry, or short fiction, American, British and Continental, as representative of contemporary points of view on the political, social and ethical problems of the 20th century. (Only one literary type will be studied in any one year, as determined by the interest of the midshipmen enrolled.) Discussions, collateral readings, reports, individual reading projects. *Three semester hours.*

H903 *Seminar in History.* Directed individual investigation and group discussion in special fields of interest in European and United States histories. This work will be accomplished by readings and lectures on the nature of historical research, the problems of causation and of interpreting evidence, and the major schools of historical interpretation. *Three semester hours.*

H904 *Seminar in Russian Military and Naval Doctrine.* The evaluation of Russian strategic and tactical concepts, the interrelationship of



armed services, the development of material, education and training, and illustrative campaigns. Emphasis will be placed upon outstanding Russian formulators and practitioners of military and naval doctrine. The influence of Stalin upon Soviet military doctrine and its differences with conventional concepts are emphasized. A reading knowledge of the Russian language is desirable but not required. *Three semester hours.*

H905 *Seminar in Philosophy of War.* A survey of the ethical and operational problems involved in war. It provides for the study of the causes and nature of war, an examination of limited and absolute war and the relationship between military staffs and civil governments, and an analysis of the writings of the leading men on the subject. *Three semester hours.*

H906 *Seminar in Naval History.* Designed to provide opportunity to pursue interest aroused in a phase of naval history. A midshipman, with the supervision of the instructor, will develop his own project of reading or research. The group will discuss oral or written reports submitted at such intervals as will keep discussion fruitful in exploring those problems or aspects of naval history which may be involved. *Three semester hours.*

H912 *Seminar in Social Studies.* An introduction to research in specific fields of the Social Studies. The work will be accomplished by readings, lectures, and seminar discussion on the nature and techniques of research, the problems of causation and of interpreting evidence, and the major schools of interpretation. Students may concentrate in history, political science or economics. *Three semester hours.*

H913 *Seminar in History of Technology.* A survey of the evolution of technology from the time of the Egyptians to the present. Major personalities in the field and significant scientific ideas and events are highlighted through readings, lectures, and seminar discussions. Emphasis is placed on the role of engineering in the development of civilization. *Three semester hours.*

H914 *Seminar in the Development of U.S. Institutions.* This course deals with American institutions and their reciprocal relationships within American society. Institutions to be studied by means of a text, reports, short papers, and roundtable discussion are those affecting politics, economics, social organization, domestic and foreign policy, and intellectual life. Following his interest, the student could, for example, study federalism, political party structure, capitalism, the organization of business and labor, class structure, military structure, educational system, the peace movement, slavery, 19th century Utopian reform. *Three semester hours.*



FOREIGN LANGUAGES DEPARTMENT

Head of Department: Captain Charles T. Cooper, III, U.S. Navy

Executive Officer: (To be assigned.)

Senior Professor: Dr. John D. Yarbro

This department aims to provide every midshipman with: (1) a working knowledge of one foreign language, with emphasis on conversation; and (2) a basic acquaintance with the areas, customs, and civilization of the people whose language is being studied. The languages offered are French, German, Italian, Russian, Portuguese, and Spanish. Since real proficiency is the goal, each midshipman normally continues a language he has previously studied, unless he is already fluent in it.

Description of Courses

FOURTH CLASS YEAR

First and Second Terms

L101 & 102 *French, German, Italian, Portuguese, Russian, Spanish.* Brief elementary pronunciation course conducted using departmental pamphlets or suitable regular texts; essentials of grammar; conversation on everyday life and area material. Enriched courses are offered to qualified midshipmen. *Six semester hours.*

THIRD CLASS YEAR

First and Second Terms

L201 & 202 *French, German, Italian, Portuguese, Russian, Spanish.* Brief review of grammar; development of speaking and writing ability based on readings of intermediate difficulty selected from stories, plays, contemporary writings, and naval phraseology. Enriched courses are offered to qualified midshipmen. *Five semester hours.*

ELECTIVE COURSES

French

L101 & 102 *Beginning French.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L201 & 202 *Intermediate French.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L701F & 702F *Advanced Written and Oral French.* Aims to develop accuracy and ease in the active use of French. Provides ample practice in writing and speaking. Includes vocabulary building and systematic review of grammar. Two terms, but each term may be taken independently. *Three semester hours each term.*

L711F & 712F *Advanced French Readings and Conversation.* Advanced conversation and discussions based on readings selected from cultural and other modern writings. Includes some composition. *Three semester hours each term.*

L703F & 704F *Readings in French Literature.* Plays, novels, poems and anthology selections by such famous authors as: Corneille, Racine, Molière, Marivaux, Voltaire, Rousseau, Hugo, Lamartine, Balzac, Flaubert, Baudelaire, Zola, Proust, Gide, Mauriac. Ample practice in conversation. Two terms, but each term may be taken independently. *Three semester hours each term.*

L801F *Contemporary French Literature.* Selected works of such influential modern authors as Proust, Mauriac, Malraux, Romain, Gide, Camus. Ample practice in conversation. *Three semester hours.*

L802F *Contemporary French.* Readings and discussions designed to provide knowledge and understanding of the French people and of French national life today. Ample practice in conversation. *Three semester hours.*

German

L101 & 102 *Beginning German.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L511G & 512G *Scientific German.* A beginning course in reading and translation, intended for those who have not studied this language at the Naval Academy, and who desire only a reading knowledge of scientific German. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L201 & 202 *Intermediate German.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L701G & 702G *Advanced German.* Selected readings, magazines and periodicals, to develop skill and facility in writing and fluency in oral discussion. Systematic drill to enable the midshipman to broaden his vocabulary range in all fields. *Three semester hours each term.*

L705G & 706G *German Naval Histories and Novels.* Readings to develop skill in naval terminology and broaden the knowledge of the midshipman in his special field. Basically World Wars I and II. (Each term may be taken independently.) *Three semester hours each term.*

L707G & 708G *German Literature of the Twentieth Century.* Literary movements and selected authors: Gerhart Hauptmann, Thomas Mann, Hermann Hesse, Wolfgang Borchert, Franz Kafka, Elisabeth Langgasser, Ernest Wiechert, and others. *Three semester hours each term.*

L801G & 802G *Goethe, Schiller and Lessing.* Selected works from the three great writers of German literature. Their influence on the literature and history of the times will be emphasized. *Three semester hours each term.*

L803G & 804G *German Literature Since Goethe.* An introduction to the German literary movements from the Liberal Age to the present. Representative works of the more important authors of each genre and period will be read and discussed. *Three semester hours each term.*

Italian

L101 & 102 *Beginning Italian.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L201 & 202 *Intermediate Italian.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L701I & 702I *Advanced Italian.* Practice in original oral composition and conversation. Selected reading and periodicals provide sources of drill materials. *Three semester hours each term.*



L801I *The Age of Petrarch and Boccaccio.* This course presents the development of the lyric and the short-story with representative readings in each. *Three semester hours.*

L802I *Dante and His Times.* The Divina Commedia is read and analyzed in the light of the literary, political and religious ideals of the Middle Ages. *Three semester hours.*

L803I & L804I *Readings in Italian Literature.* Selected works of such influential authors as Ariosto, Tasso, Metastasio, Goldoni, Parini, Alfieri, Foscolo, Manzoni, Leopardi, Pascoli, D'Annunzio. Ample practice in conversation. *Three semester hours each term.*

Portuguese

L101 & 102 *Beginning Portuguese.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L201 & 202 *Intermediate Portuguese.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L701P & 702P *Advanced Portuguese.* Advanced study of the language with practical written and oral work leading to increased facility in the use of Portuguese. Selected readings and current periodicals will be used as source materials. *Three semester hours each term.*

L703P *Introduction to Portuguese Civilization and Literature.* Portuguese geography, history, economy, and arts—general readings. Portuguese literature—selections from Gil Vicente, Camoes, Garrett, etc. Informal lectures. Discussion. *Three semester hours.*

L704P *Introduction to Brazilian Civilization and Literature.* Brazilian geography, history, economy, and arts—general readings. Brazilian literature—selections from Gilbert Freyre, Verissimo, Benedetti, etc. Informal lectures and discussion. Consideration of contemporary problems in Portugal and Brazil and relations of these countries with the United States. Oral presentation on these and allied subjects. *Three semester hours.*

L801P *The Brazilian Short Story and Theatre.* Selected readings in the short story and the theatre from contemporary Brazilian writers. Monteiro Lobato, Pereira de Almedia, Callado, etc. Informal lectures. Discussion. *Three semester hours.*

L802P *Contemporary Naval, Technical, and Nontechnical Portuguese.* Selected readings on naval and technical subjects and readings in current nontechnical periodicals. Preparation for oral presentations and briefings covering situations in which a naval officer might find himself in Portuguese-speaking areas. *Three semester hours.*

Russian

L101 & 102 *Beginning Russian.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semester hours.*

L201 & 202 *Intermediate Russian.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L703R & 704R *Advanced Russian.* Development of accuracy and ease in the use of Russian through oral interpretive reading of narrative and dramatic literature, and through the use of transcriptions by contemporary Russian artists. *Three semester hours each term.*



L705R & 706R *The Soviet Press.* Analysis of articles from the current Soviet press. *Fel'eton*, Party appeal, reports, news. Objective is to acquire a critical reading ability of Soviet periodicals. Discussions to be conducted in Russian. *Three semester hours each term.*

L711R & 712R *Scientific Russian.* A reading course in current Soviet scientific literature. Material will be selected from current periodicals, textbooks and encyclopedias. Special attention will be devoted to the administrative framework of theoretical and applied research. Two terms, but each term may be taken independently. *Three semester hours each term.*

L801R *Russian History in Literary Works.* Study of historical epochs through dramas and tales. Reports and discussions in Russian. *Three semester hours.*

L802R *The 19th Century Russian Novel.* Readings from the works of Leo Tolstoy, Turgenev, and Dostoevsky. Reports and discussions in Russian. *Three semester hours.*

L803R *Anton Chekhov.* Study of selected plays and short stories of Chekhov. Objective is to increase mastery of contemporary Russian vocabulary and to develop an understanding of Chekhov's world. *Three semester hours.*

Spanish

L101 & 102 *Beginning Spanish.* Offered to Third, Second, and First Class midshipmen as a second language. No credit granted unless both terms are satisfactorily completed. *Six semesters hours.*

L201 & 202 *Intermediate Spanish.* No credit granted unless both terms are satisfactorily completed. *Five semester hours.*

L701S & 702S *Advanced Written and Oral Spanish.* For students who already have a basic knowledge of Spanish grammar and experience in spoken language. This course is intended to develop facility in writing and speaking correct and concise Spanish. Discussions, short speeches and oral and written reports in Spanish. *Three semester hours each term.*

L711S & 712S *Advanced Spanish Readings and Conversation.* Advanced conversation and discussions based on readings selected from cultural and other modern writings. Includes some composition. *Three semester hours each term.*

L703S *Survey of Spanish Literature.* First Term. A background course to give the student an understanding of the main features of the

great literary movements of Spain, with careful reading and critical discussion of the major literary creations. Discussions, written and oral reports in Spanish. *Three semester hours.*

L704S *Survey of Spanish Literature.* Second Term. Continuation of first term, but may be taken independently. *Three semester hours.*

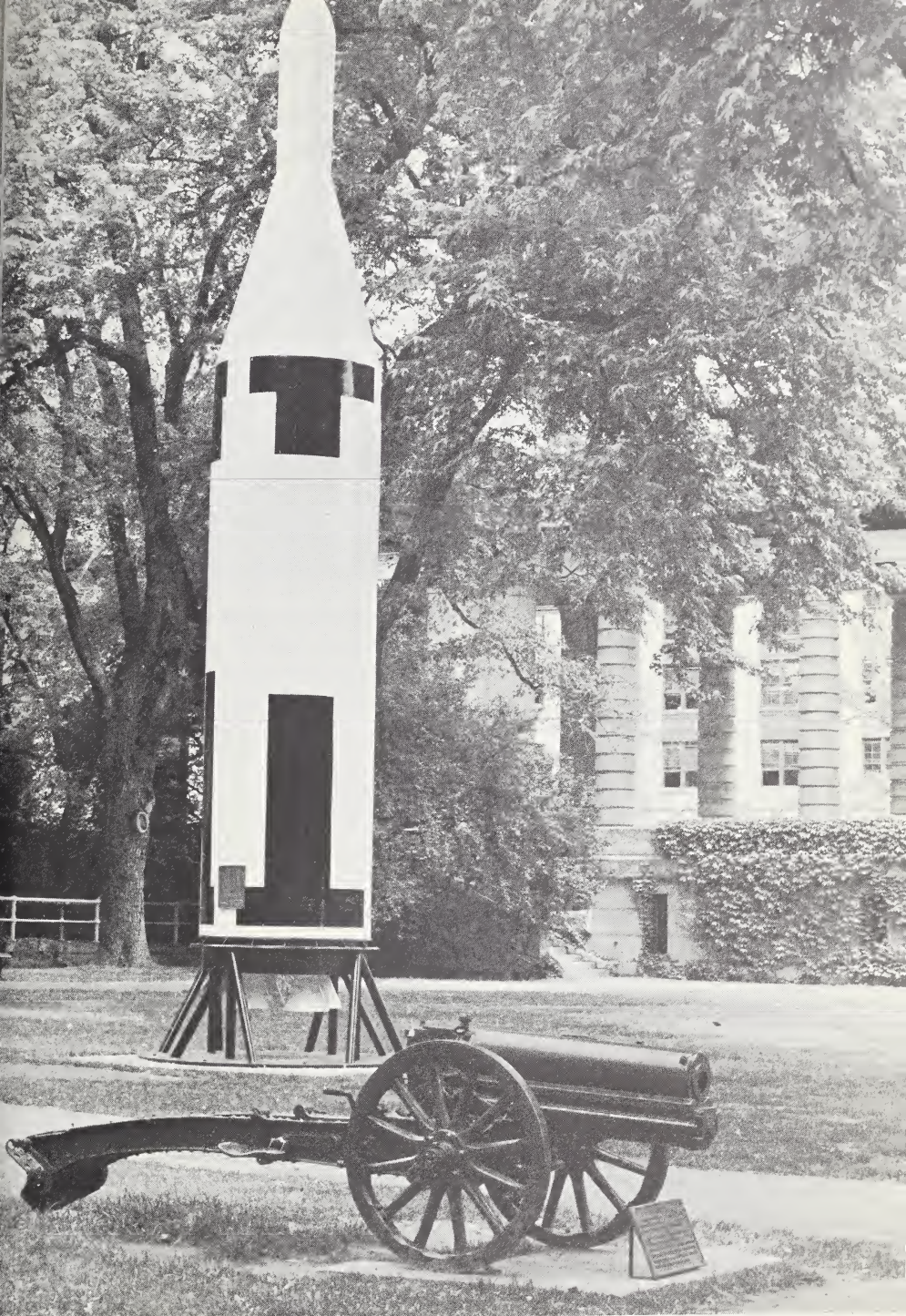
L802S *Contemporary Spanish Literature.* This course will present a study of important Spanish and Spanish American writers of the 20th century through the reading of representative stories, plays, essays, and poems. *Three semester hours.*

L803S & L804S *The Contemporary Spanish and Spanish-American Short Story.* This course offers to the advanced student the finest examples of Spanish and Spanish-American short stories. *Three semester hours each term.*

L805S & L806S *Survey of Spanish-American Literature.* This course presents a broad panorama of Spanish-American literature from its inception to the present day. *Three semester hours each term.*

L807S *Spanish Civilization.* The story of a 3,000-year-old civilization with emphasis on the most significant aspects of its history, culture, and politics. *Three semester hours.*

L808S *Spanish-American Civilization.* An area study including Mexico, Central America, the Caribbean, and South America. An orientation on early cultures, followed by study of the geography, resources, political history, institution and customs of selected countries. *Three semester hours.*



Polaris Missile Overshadows Arms of Other Days



Programing Digital Computer

Naval Science

Director: Captain Harry A. Seymour, U.S. Navy

The courses offered by the Departments of the Naval Science Division are generally taught during the last 2 years of the midshipman's residence at the Naval Academy. In the Naval Science field the midshipman applies the education that he has acquired in his science and engineering studies to the examination of and further study in the professional areas he will encounter as a commissioned officer. The Navy operates in a complex environment, and the graduate must be prepared to cope not only with the command challenge of the naval profession but with technical problems covering the complete spectrum from undersea warfare to ballistic missilery as well. In his Naval Science studies the midshipman establishes a foundation of professional competence. His courses are designed to teach fundamental principles and the application of these principles to the solution of naval problems. With this background as a base he can, as a commissioned officer, apply himself to the effective control of specific equipment and operational techniques.

The Director of Naval Science has cognizance over instruction in the following departments:

Command Department
Weapons Department

Naval Hygiene Department

COMMAND DEPARTMENT

Head of Department: Captain William R. McDowell, Jr., U.S. Navy
Executive Officer: (To be assigned.)

The objective of the department is to teach the midshipmen the fundamentals of naval leadership, navigation, meteorology, methods of operations analysis, and naval operations in the air, on the surface, and under the seas. Electives in Military Psychology, Advanced Navigation, Astronomy, Oceanography, Applied Oceanography, and Naval Strategy and Military Planning, and Introduction to Decision Theory are offered.

The department provides academic studies during the last 2 years in navigation, current and advanced concepts of naval operations, and the techniques of naval leadership, including psychology, management, and military law. Practical applications of all aspects of shipboard operations including leadership as well as seamanship, shiphandling, communications, and shipboard organization are presented throughout the entire 4 years culminating each spring in multiclass exercises in naval tactics aboard YPs. Aviation experience is gained during Second Class summer. First Classmen participate as junior officers in summer cruises aboard fleet ships operating around the world. The midshipman is thus developed through study, courses, and practical application for service as a career Naval Officer.

FOURTH CLASS YEAR

Summer

C100 *Basic Seamanship and Navigation.* Practical instruction and drills in elementary seamanship, including marlinspike and deck seamanship, power boat handling, sailing, rules of the nautical road, lookout procedures, signaling (flashing light and flags), elementary piloting and shiphandling, and naval sea power presentations.

Second Term

C104 *Shipboard Orientation and Fleet Operations.* Practical instruction and drills in rules of the nautical road, marlinspike seamanship, Combat Information Center procedures, communications, elementary tactics and seamanship aboard YP craft, and shipboard orientation and naval indoctrination presentations. *Three-quarters semester hour.*

THIRD CLASS YEAR

Summer Cruise

During his summer cruise, the third classman is introduced to life aboard fleet ships by serving in specific billets and actively partici-

pating in a wide range of shipboard evolutions. He lives the life of the enlisted man performing routine ship's work, standing deck and engineering watches, operating ship's boats, and exercising at shipboard drills. He completes the required practical factors for seaman and fireman and takes the standard qualifying examinations for those rates. The third classman then receives a concentrated indoctrination in amphibious operations and participates in an actual amphibious landing exercise.

Second Term

C204 *Seapower*. Presentations by special teams from the various Type Commands of the U.S. Atlantic Fleet, portraying the dynamic applications of seapower in an age of rapid technological progress, and describing the major facets of the role played by the fleet from the point of view of the future destroyerman, submariner, aviator, and marine officer. *One-quarter semester hours.*

SECOND CLASS YEAR

Summer Term

Summer Cruise. Broad professional naval officer training which emphasizes naval aviation, submarine operations, and missile orientation. Each midshipman participates in carrier and submarine operations, makes training flights in various type aircraft, visits fleet aviations squadrons and receives missile indoctrination.

C300 *Air-Ocean Environment*. An introduction to the Air/Sea environment; a broad description of the physical and chemical characteristics of the sea, submarine topography and the biological environment. An introduction to basic meteorological phenomena. Studies in the interrelationships of the two environments involving heat balance, turbulence, and air/marine circulation systems. *One and one-quarter semester hours.*

Plebe Summer Ship Handling Drill



First Term

C301 *Piloting and Navigation.* Instruction in visual and radar piloting, including aids to navigation, navigation instruments, tides and currents, charts and publications, and supported by afloat piloting and anchoring instruction and drill. The course covers the fundamentals of navigational astronomy and celestial navigation. *Three and one-half semester hours.*

Second Term

C306 *Introduction to Military Psychology and Management.* Introduction to the study of psychology and human behavior and its application to the practices of Naval Leadership. Instruction in the basic principles of management and organization with discussion of the procedures and techniques in applying human relations to Naval management. *Two and one-half semester hours.*

C308 *Navigation.* Celestial, electronic, and inertial navigation. Principles of Maritime Law. Solutions of elementary relative motion problems using the maneuvering board. Practical instruction in Loran and the Combat Information Center, and fleet operations drills aboard YP craft with midshipmen of the first and fourth classes, with second classmen receiving a practical indoctrination in the use of the sextant, piloting by means of both radar and visual observations, and participating, under the supervision of first classmen, in circular formation tactical operations employing current fleet antisubmarine concepts. *Three semester hours.*

FIRST CLASS YEAR

Summer Cruise

During his second afloat cruise the midshipman stands the watches and performs the duties of a junior officer. He is exposed to the social courtesies, amenities and customs of wardroom life aboard ship by subsisting in large part on the officers' mess. Training programs are employed consisting of day's work in navigation, lectures, and studies required in the completion of his *cruise journal*.

First Term

C407 *Case Studies in Leadership and Military Law.* Case study and guided discussion methods are used to examine and analyze current, typical junior officer leadership and management situations with particular emphasis on self-development and evaluation of values, moral standards and individual responsibilities. A survey course in military Law and in International Law, covering those aspects of most use to the junior officer, completes the Leadership course of studies. *Two and one-half semester hours.*

C411 *Naval Operations I.* Study of international relationships; organization for national defense; current national strategies including counterinsurgency; command and employment of naval forces in support of national policy. Introduction to operations analysis methods and applications to search, detection, and electronics warfare. With this foundation, a detailed and analytical study is made of naval air operations and anti-air warfare.

The supporting drill program provides opportunity (aboard YPs afloat and in Combat Information Centers) for practical application of the principles and procedures taught in the classroom of air, surface, and ASW operations. *Three and three-quarter semester hours.*

Second Term

C414 *Naval Operations II.* A continuation of the analytical study of naval warfare including logistic support, mine warfare, and amphibious operations. A comprehensive examination of the current and projected submarine threat—and the nature of the consequent anti-submarine problem; detailed study of ASW operations, including the application of operations analysis methods to antisubmarine warfare.

The supporting drill program provides opportunity for practical application of the principles and procedures associated with air, surface, and antisubmarine warfare operations. *Four and one-half semester hours.*

C408 *Meteorology (For Class of 1964 Only).* Basic meteorology with emphasis on its application to Naval Operations. Introduction to techniques of observation and measurement of meteorological phenomena; study of causes and effects of the weather; brief practical instruction on weather map analysis and forecasting; introduction to role of oceanography in Naval Operations; and a brief of Naval Weather Service organization and responsibilities. *One semester hour.*

ELECTIVE COURSES

C602 *Astronomy.* A descriptive course designed to give an appreciation of the universe, and to develop interest in interplanetary navigation and space travel. Two aspects of modern astronomy receive particular emphasis. First, the tools and methods employed in the measurement and reduction of astronomical observations to sound conclusions, and, second, those elements of astronomy which are related to our modern-day experiments in space. *Two semester hours.*

C603 *Oceanography.* An introduction to the study of the sea: the physical and chemical properties of sea water, the nature of the ocean floor, characteristic plant and animal communities. Includes the study of ocean basins, movement of water masses, and the dynamics of ocean currents, waves and tides. *Three semester hours.*

C606 *Applied Oceanography*. Applications of the basic principles and processes of oceanography to the problems of mine warfare, ship routing, ice forecasting, amphibious operations, and undersea warfare. Particular emphasis is given to the oceanographic factors controlling underwater sound propagation and antisubmarine warfare. *Three semester hours.*

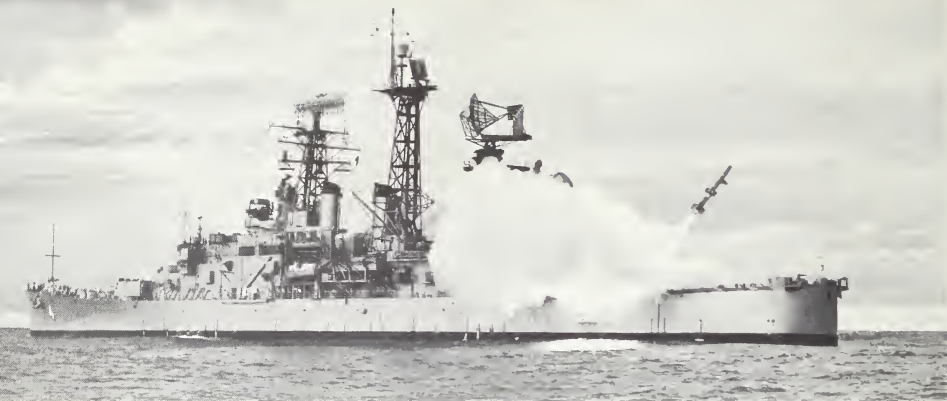
C805 *Military Psychology*. Introduction to the sociology of military life through the study of basic psychological factors of cognition, motivation and interpersonal response traits; social attitudes, their nature and formation; the social and cultural habitat of man in terms of language, communication, and origins of culture; leadership groups, military organizations as social systems; and individual role behavior and personality in military groups. *Two semester hours.*

C806 *Advanced Navigation*. Specialized navigation theory and techniques. The sailings, chart and grid design, magnetic compass adjustment, polar navigation, lifeboat navigation, and Ship's Inertial Navigation System. An extended problem covering voyage planning and transit. *Three semester hours.*

C808 *Naval Strategy and Military Planning (Seminar)*. The interrelationship of naval strategy, national strategy, policy, and the applications in current international situations and commitments. The strategic effect of naval operations, U.S. naval force levels, and economic and cultural factors affecting the employment of naval power. A detailed study of military planning, the intelligence process, national and naval estimates, etc. *Three semester hours.*

C810 *Introduction to Decision Theory*. Principles used in decision making; utility and descriptive statistics, applications to fair bets; uncertainty due to ignorance of the state of nature; Bayes strategies and supporting lines; computation of Bayes strategies; models of probability and utility. Naval applications in the areas of operational planning and command decision. *Two semester hours.*





WEAPONS DEPARTMENT

Head of Department: Captain William R. Werner, U.S. Navy

Executive Officer: Commander Richard T. Lyons, U.S. Navy

The objective of the Department is to provide midshipmen with the requisite professional education for performance of duty in the weapons field. Midshipmen receive classroom instruction in the principles of naval weapons and the systems that control them.

Instruction in the Weapons Instrumentation Laboratory emphasizes the application of principles studied in the classroom. Digital and analog computers are used as engineering tools for the solution of problems developed in the laboratory.

Description of Courses

FOURTH CLASS YEAR

Summer

W100 *Small Arms.* Practical instruction in nomenclature, field stripping, and assembly of small arms. Firing of service rifle, and pistol. Those who qualify are awarded the U.S. Navy Expert Rifleman medal and the U.S. Navy Expert Pistol Shot medal.

THIRD CLASS YEAR

Summer Cruise

Familiarization with gun and missile batteries, anti-submarine ordnance and control systems. Instruction in ammunition handling and safety precautions. Midshipmen man batteries and control stations for target firing exercises.

SECOND CLASS YEAR

Summer Term

W300 *Digital Computers.* A study of number theory and computer fundamentals. Laboratory instruction in computer programing and computer operation. *One-half semester hour.*

First Term

W305 *Terminal Ballistics.* Principles of terminal ballistics including target characteristics, damage criteria, theory of chemical and nuclear explosives, explosives effects, and weapons systems effectiveness. Laboratory instruction in explosives testing. *Two and one-quarter semester hours.*

Second Term

W306 *Target Intercept Analysis.* Weapons control analytics, prediction, flight path analysis and trajectories, and instrumentation for solution of the fire-control problem. Laboratory instruction in analog computers directed toward the solution of the fire control problem. *Two and one-quarter semester hours.*

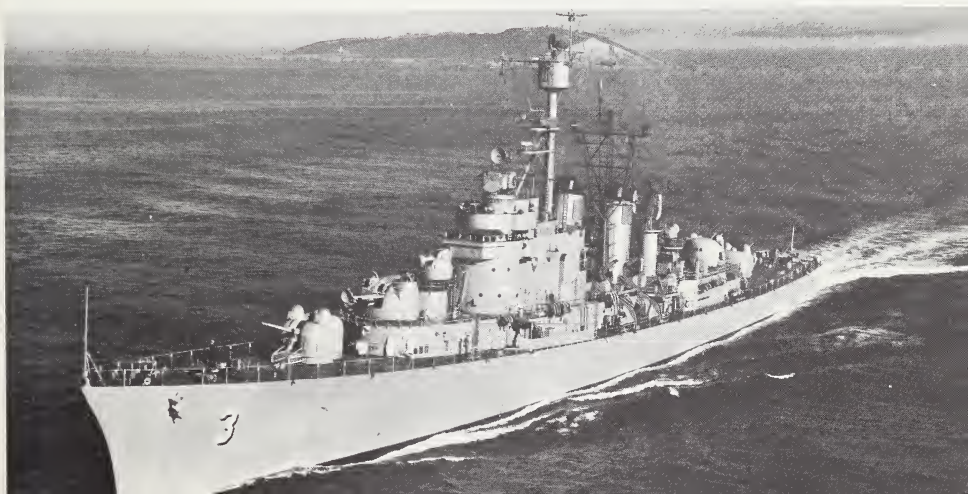
FIRST CLASS YEAR

Summer Cruise

During the summer cruise, midshipmen of the First Class use their knowledge of weapon systems to control and fire gun and guided missile batteries. They receive practical instruction in weapons control systems, target threat evaluation equipment, safety precautions, and the duties of a gunnery watch and division officer.

First Term

W407 *Elements of Weapons Systems Dynamics.* Weapons systems tasks, phases, requirements and functional components with emphasis



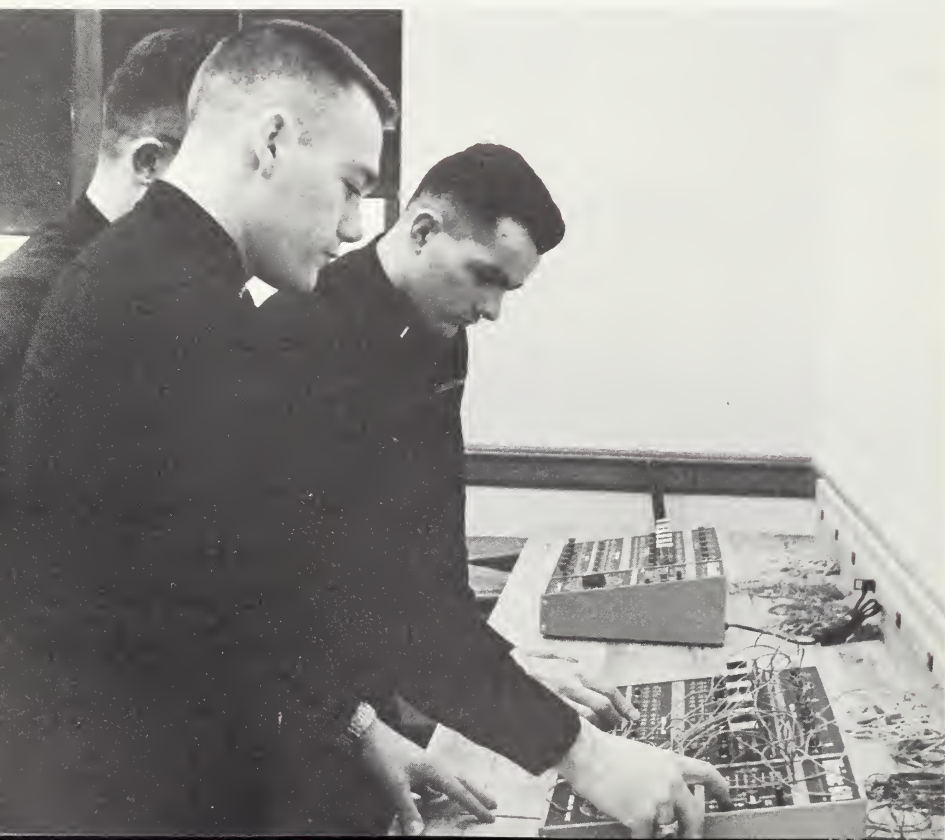
on control systems. The general principles of servomechanisms with viscous and error rate damping. The dynamics of open and closed loop systems emphasizing stabilization networks. *Two and one-half semester hours.*

Second Term

W408 *Weapons Systems Analysis and Synthesis.* Organization and management of design and systems development. Exterior design, including problem analysis, mathematical models, simulation and measures of effectiveness. Interior design (single thread, high traffic, and competitive) including system components and tools of system design. Laboratory applications of systems analysis, reliability and a preliminary design study. *Two and one-half semester hours.*

ELECTIVE COURSES

W707 *Digital Computers Programing and Utilization.* An introduction to the principles of digital computer programing, including automatic programing languages, machine languages, the programing of special purpose computers and general purpose computers. *Three semester hours.*



W708 *Analog Computers—Fundamentals, Programing, and Operation.* A study of the fundamental principles of analog computers, including the physical and mathematical bases of computer components, scaling, analysis of problems and applications of analogs to problem solving and system simulation. Practical experience with programing laboratory computers and analysis of results. *Three semester hours.*

W709 *Methods of Weapons Systems Analysis.* Solution of electrical, mechanical, hydraulic, and pneumatic systems using analog analysis. Investigation of periodic and distributed systems; linearization analysis of electronic, missile control, pneumatic, and electromechanical systems. *Three semester hours.*

W802 *Advanced Weapons Systems Engineering.* Taken concurrently with the basic curriculum course, W408 *Weapons Systems Analysis and Synthesis.* It provides a more detailed and thorough study of weapons systems and includes as a term project the complete analysis and synthesis of an operating naval weapons system. *Three semester hours.*

W902 *Weapons Research Project.* A creative technical research project in an aspect of the weapons field in which the student has a special interest, and which is approved by the Weapons Research Adviser in the Department. *Three semester hours.*

NAVAL HYGIENE DEPARTMENT

Head of Department: Captain Walter Welham (MC), U.S. Navy

The objective of the department is to instruct each midshipman so that he may appreciate the value and necessity of personal hygiene, and realize his command responsibility for the promotion and maintenance of physical and mental health.

Description of Courses

FOURTH CLASS YEAR

Summer

Y100 *Fundamentals of Hygiene.* The midshipman is introduced briefly to the fundamentals of personal hygiene, including mental and physical hygiene and first aid.

FIRST CLASS YEAR

First Term

Y101 *Naval Hygiene.* Instruction covering the human body as a functioning machine, the care of the human machine, and the effect of the various military environments. *Three-quarters semester hour.*



Brigade Color Guard

The Commandant of Midshipmen

Commandant: Captain Charles S. Minter, Jr., U.S. Navy
Executive Officer, Bancroft Hall: Captain Kenneth B. Brown,
U.S. Navy

The Commandant of Midshipmen has cognizance over training and education conducted in the Executive and Physical Education Departments. He serves as Head of the Executive Department, with the Executive Officer of Bancroft Hall as his principal assistant. Under the direction of the Commandant, the Head of the Physical Education Department supervises physical education drills and the intramural sports program.

EXECUTIVE DEPARTMENT

The Executive Department prepares the midshipmen for the exercise of command. The specific objectives of the Executive Department are: (a) To develop character and guide the development of proper military and personal habits; (b) to inculcate discipline and to foster the subordination of self to a common cause; (c) to develop in each midshipman an appreciation and knowledge of and motivation for his future role as a naval officer through personal example and practical application of the psychological principles of human behavior and the principles and techniques of leadership.



The officers of the Executive Department work and live in close contact with the midshipmen, enabling them to further the development of personal and military character through precept and example, counsel and guidance, and when required, corrective or disciplinary action.

Description of Courses

FOURTH CLASS YEAR

Summer Term

Orientation and Indoctrination. An elementary course to orient the new midshipman in the naval service and to indoctrinate him with the way of life at the Naval Academy, its mission, ideals, standards, traditions, customs, and the duties required of him.

First and Second Term

Infantry drills, watch standing, and continued indoctrination. *One semester hour.*

THIRD CLASS YEAR

First and Second Terms

Infantry drills, watch standing, elementary military responsibilities. *One semester hour.*

SECOND CLASS YEAR

First and Second Terms

Infantry drills, watch standing, increased military responsibilities. *One semester hour.*

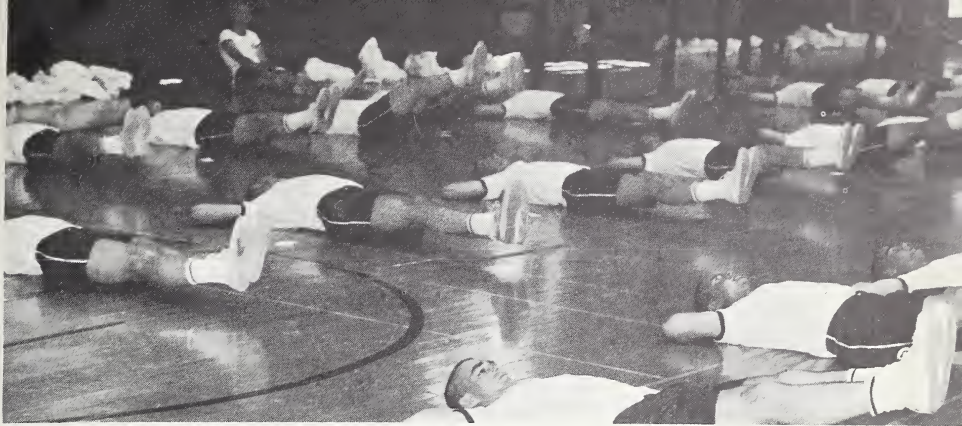
Second Term

Personal Finance. A noncredit study of the principles of insurance, benefits available from the government to the survivors of military personnel, personal insurance programs and investments, and personal financial planning. Course includes budget planning for the junior officer. A review lesson is assigned during the First Class Year.

FIRST CLASS YEAR

First and Second Terms

Infantry drills, watch standing, and performance of specific responsible duties in the Brigade Organization involving the exercise of leadership and command. *One semester hour.*



PHYSICAL EDUCATION DEPARTMENT

Head of Department: Captain William S. Busick, U.S. Navy
Executive Officer: Commander Wesley R. Gebert, Jr., U.S. Navy

Each midshipman's skill, strength, endurance, agility, and competitive spirit are developed in order that he may be capable of surmounting severe physical hardships, be proficient in training and instructing others, and acquire useful habits of physical fitness.

Throughout the entire four years each midshipman is required to participate in a comprehensive and extensive program of intramural and intercollegiate sports. The objective of the program is to develop competitive spirit, confidence, and team work.

Description of Courses

FOURTH CLASS YEAR

Summer

Physical Education Orientation and Indoctrination. Preliminary examinations in swimming, posture, and athletic ability. Testing in physical achievement with subsequent preparation of class grouping. Physical education drills in fundamentals of swimming, boxing, and wrestling. Indoctrination drills in lacrosse, fencing, soccer, gymnastics, crew, golf, tennis, squash racquets, volleyball, and track.

First and Second Terms

Physical Education. Fundamentals of badminton, soccer, swimming, boxing, wrestling, gymnastics, golf, tennis, posture, volleyball, basketball, handball, bowling, and squash racquets. Tests in applied strength, agility, swimming, boxing, wrestling, and gymnastics. *Two semester hours.*

THIRD CLASS YEAR

Physical Education. Continuation of instruction in swimming, boxing, wrestling, personal conditioning, tennis, golf, and gymnastics, and tests in applied strength, agility, swimming, boxing, and wrestling. *One semester hour.*

SECOND CLASS YEAR

Physical Education. Advanced instruction in swimming, boxing, tennis, golf, handball, officiating, posture, and principles of personal conditioning, hand-to-hand combat, and volleyball. Tests in applied strength, agility, swimming, and boxing. *One and one-quarter semester hours.*

FIRST CLASS YEAR

Physical Education. Instruction in advanced swimming, hand-to-hand combat, personal conditioning, tennis, golf, badminton, and athletic administration. Tests in measurement activities. *Three-quarters semester hour.*



TRAINING UNDER SAIL

Training under sail at the Naval Academy develops team discipline, leadership, and appreciation of the sea and ships. In an age of nuclear power, there is a strong need for moral courage and resourcefulness in men at sea. Ship handling and basic deck seamanship are still factors to be counted in bringing any ship into port, whether she be powered by sail or nuclear reactor. The sail training program at the Academy fosters opportunities for acquiring each of the aforementioned qualities and skills. The Academy is utilizing one of the finest facilities in the world, as well as some of the best known boats in ocean racing circles.

The Academy's 62-foot cutter *Highland Light* was holder of the record for elapsed time in the Newport-Bermuda ocean racing classic for 22 years, and the 71-foot yawl *Royono* was first to cross the line in the 1952 race. The sailing fleet ranges from the 88-foot schooner *Freedom*, the 50-foot yawls *Windfall II* and *Gypsy*, and twelve 44-foot yawls, to 14-foot dinghies. Thirty Gannet dinghies are used for advanced training and intercollegiate competition.

Competitive experience is gained during the school year with the larger boats on the Chesapeake Bay in open competition, and in one-design intercollegiate and intramural contests in the 44-foot Luder's yawls and 14-foot dinghies. The Naval Academy varsity dinghy sailing team is among the best in the country, has placed three of its members in the 1960 Olympic Finn monotype eliminations, as well as holding the present Middle Atlantic Dinghy Championship. During the summer the larger boats are sailed on the open ocean as a postgraduate sailing exercise in the Bermuda and Annapolis-Newport ocean races.

Sail training beyond the primary stages is administered by the Naval Academy Sailing Squadron, an organization composed of officers and personnel of the Severn River Naval Command interested in contributing to the welfare and ultimate success of Academy sailing. Advanced sail training, as such, is voluntary. All midshipmen are given about 2 hours training in knockabouts and dinghies and 4 hours in yawls. About one-quarter of the Brigade participates beyond primary training in competitive and recreational sailing. The Naval Academy Sailing Squadron, as well as conducting this advanced training, serves as a liaison with the sailing fraternity everywhere, as sailing at the Academy not only gives vital insight to the Navy itself but is the midshipman's first experience in carrying the Navy to other ports.

On the page opposite four of the Luder's yawls are shown close-hauled on the starboard tack in Chesapeake Bay off the mouth of the Severn River. These yachts are used for the intercollegiate MacMillan Cup series sailed at the Academy each spring.



A Quiet Hour in the Main Reading Room

THE LIBRARY

Librarian: Dr. Vernon D. Tate

Mission.—The Naval Academy Library is the principal bibliographic reference and research organization for the Severn River Naval Command, organized under a professional Librarian and library staff to provide books, periodicals, related materials and information to aid the naval service. Its primary responsibility is to the Superintendent, the officers and civilian faculty, and the midshipmen; but it also performs important services for the officers stationed throughout the Command. As occasion may require, it extends its assistance farther afield to individuals throughout the country and even to foreign institutions.

To render these services, it has assembled one of the largest collection of naval books, periodicals and related material in the United States. In addition, the library provides all of the resources of a first class college library in support of the academic program, and aims to incorporate the latest authoritative material in all major fields of knowledge.



The New Brigade Library in Bancroft Hall Provides Additional Facilities for Evening Study

Location and holdings.—The Main Library, housed in reading and stack rooms in Mahan and Maury Halls, contains about 180,000 volumes and extensive holdings of technical and naval magazines. The collection is especially strong in naval history and biography, in works on the development of ships, and in seamanship, navigation, mathematics, aeronautics, ordnance and gunnery. It is well developed in history, biography, international law and relations, travel, and in reference works, with other subjects in lesser degree. A collection of current fiction and nonfiction is maintained for recreational reading. The books and periodicals are arranged on open shelves providing convenient access.

Bulletin boards in the library announce new books; the Library Bulletin, issued biweekly, lists selected newly acquired books with a brief descriptive note of their contents. Citations to articles in specialized naval, military or engineering journals, and at times to items of naval interest appearing in the general periodicals are included. The Library Bulletin is made available to all officers, professors and midshipmen.

Use of the library is extensive. All midshipmen during their first summer receive 2 hours of formal instruction under the direction of the library staff in the use of the various periodical indexes, reference books, and other library tools. The purpose of the program is to

acquaint midshipmen with the organization of the library, location of books, use of the catalog, and the best ways to look up information on a wide variety of topics.

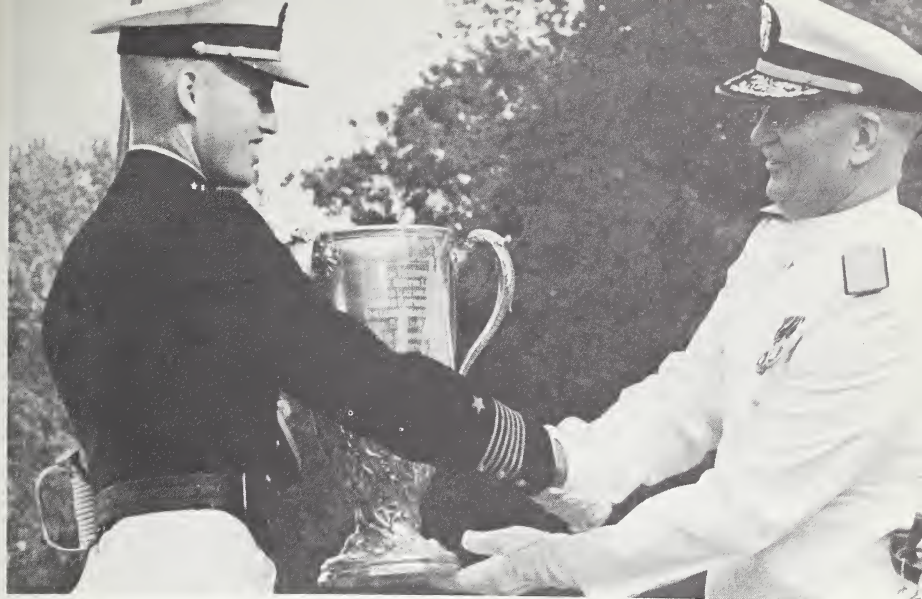
The library provides officers, instructors, and midshipmen not only with facilities for professional study, but also with opportunities for widely based cultural and recreational reading.

Brigade Library.—In the fall of 1961 the Brigade Library, located between the recently completed seventh and eighth wings of Bancroft Hall, was placed in operation. Its resources are being built up to a design capacity of between 15,000 and 20,000 volumes, and include reference and professional materials, a carefully selected general collection in all fields together with a generous allocation of fiction and recreational reading books. Two innovations, a separate room for naval and other periodicals, and a well equipped audio section with individual listening rooms for records and tapes of music and the spoken word are important new features. This attractive new library is well lighted and comfortably furnished with formal and informal seating for over 200; a long schedule of open hours makes it available at all the hours midshipmen are free to use it.

Departmental collections.—The departments of instruction maintain small departmental collections of texts, and of works relating to their particular fields for use of their instructional staffs. Significant titles in these locations are listed in the catalog of the Main Library.

THE EVENING LECTURE PROGRAM

The principal lecture series conducted at the Naval Academy is that given to the First Class Midshipmen. The educational methods employed at the Naval Academy in general demand of the student a high order of concentration and intense application and are characterized by sharp focus in the presentation of subject matter. Therefore, it is particularly appropriate during the First Class year to provide a better understanding of the challenging national, international, and professional problems, and of concepts of broad intellectual implication. The First Class lecture series endeavors to do this by securing speakers who are outstanding in their field, and of wide experience and understanding, whose contribution to the midshipman's perspective will be of lasting value. The lecture series emphasizes matters of professional naval interest, subjects in the liberal arts, foreign policy with respect to the current world situation, and the role of the Navy in meeting national security responsibilities.



PRIZES AND DISTINCTIONS

Each year more than 50 prizes and awards are presented to midshipmen for outstanding accomplishments in academic work, for marked proficiency in professional departments, or for excelling in contests of knowledge about such matters as world history of the present day, and in debate and public speaking.

Prizes normally consist of selected items which will be useful in a professional or personal way upon graduation. In some cases the prize or award is specified by the donor but in many the choice of a prize, within certain limitations, is left with the recipient.

These prizes and awards are provided by national patriotic organizations and societies, by former Naval Academy classes, by or in behalf of outstanding leaders in military and civilian life, as memorials to deceased graduates, and by organizations recognized widely in some field of activity or endeavor with a direct or indirect naval association or affiliation.

One of the more noteworthy distinctions which can befall a member of each graduating class is to be a recipient of a letter of commendation from the Superintendent. In 1961, 24 midshipmen received this high honor for having demonstrated outstanding officerlike qualities and for having contributed most by precept and example to the development of those qualities within the Brigade of Midshipmen.

Appropriate awards also afford recognition to those who excel in athletics and who participate in the many extracurricular activities which help to broaden and enrich the lives of the members of the Brigade of Midshipmen.



ATHLETICS AT THE NAVAL ACADEMY

All midshipmen participate in the Naval Academy's sports program on intercollegiate or intramural teams not only to help maintain physical fitness but for the pleasure of the game and, if possible, for the honor of representing the Academy. The fall, winter, and spring schedules cover twenty different sports, each expertly instructed by a veteran coaching staff.

Athletic facilities at the Naval Academy are among the finest in the nation. The recently completed Navy-Marine Corps Memorial stadium seats 29,000 for home football games, and the new Navy Field House seats 5,000 for basketball and has an indoor track and full-size baseball infield. Acres of playing area, a large swimming pool, squash and handball courts, and rifle and pistol ranges are all in the immediate vicinity of Bancroft Hall.

Intercollegiate Athletics

Navy teams have earned an outstanding record of success in playing the leading colleges and universities from all parts of the nation. As many as a dozen All-Americans will be chosen from the Navy ranks in an athletic year. Among the sports included in this extensive competition are: baseball, basketball, crew, cross country, fencing, football, golf, gymnastics, lacrosse, pistol, rifle, sailing, soccer, squash, swimming, tennis, track, and wrestling.



Lettermen



Fall Sports

Football—The midshipmen play a 10-game schedule, meeting leading elevens from coast to coast. Last season alone, Navy played before more than 400,000 fans. The Army-Navy classic annually draws 100,000 to Philadelphia Stadium and millions more to their television screens. The football program also includes junior varsity, plebe, and lightweight teams. The Navy 150-pound eleven has won more championships than any other college in the Eastern League.





Cross Country—On many a fall Saturday, Navy harriers run the rolling terrain of their home base, the Navy golf course across the Severn from the Academy, in competition with top collegiate foes. Cross country is a grueling sport demanding superb conditioning.

Soccer—Navy soccer teams have done extremely well in recent years against the cream of college competition. The 1962 team ran up 10 victories against 1 defeat, placed men on the All-America teams, and climaxed the season with a win over Army.





Sailing—Dinghy sailors have a fall sports season and a spring sports season too, with occasional frostbiting in between. Besides competing in regular intercollegiate regattas, Navy sailors are hosts for the MacMillian Cup series sailed in the Academy's 40-foot Luder yawls.

Bill the Goat—The Navy mascot, known the world around.

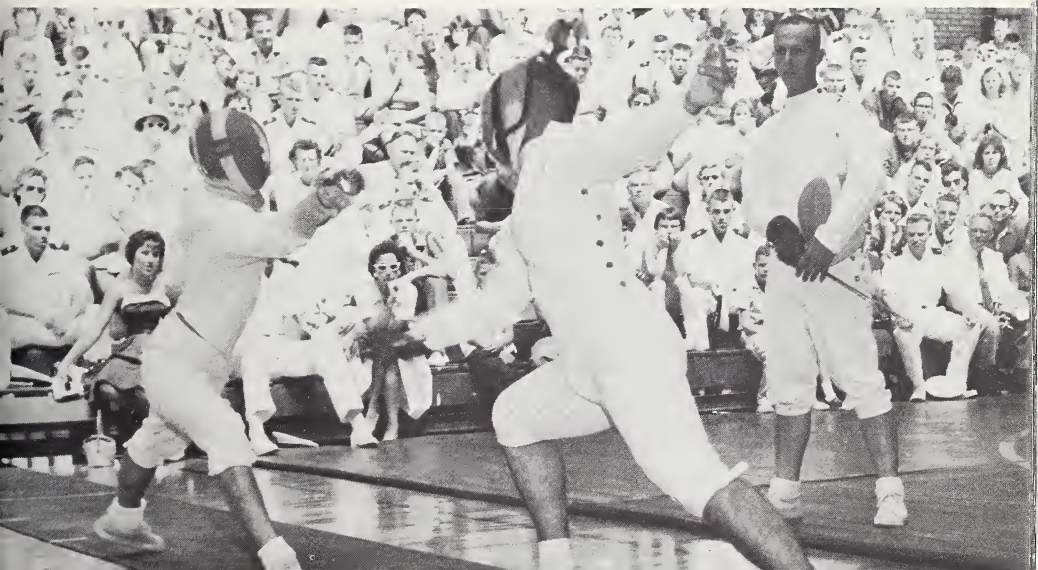


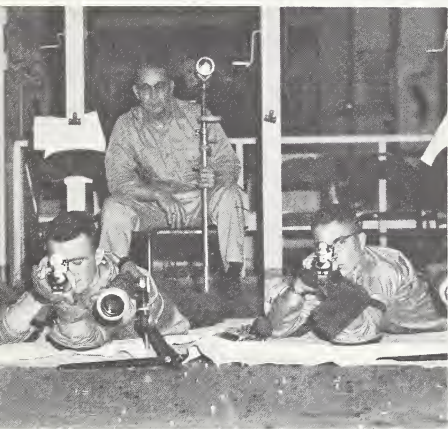


Winter Sports

Basketball leads the parade of winter sports. Navy teams have not had a losing season in the past 20 years.

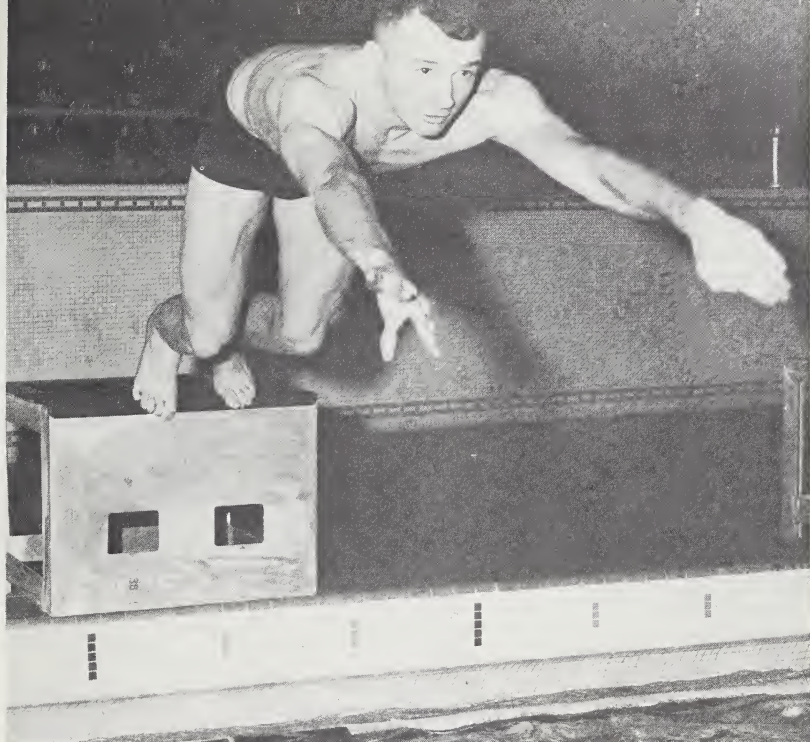
Fencing finds midshipmen in the forefront of collegiate competition as frequent national champion team and individual weapon winners.





The Naval Academy takes pride in its *gymnastics*, *rifle*, *pistol*, and *squash* teams. They have been repeated leaders in intercollegiate meets and have produced a number of individual national champions.

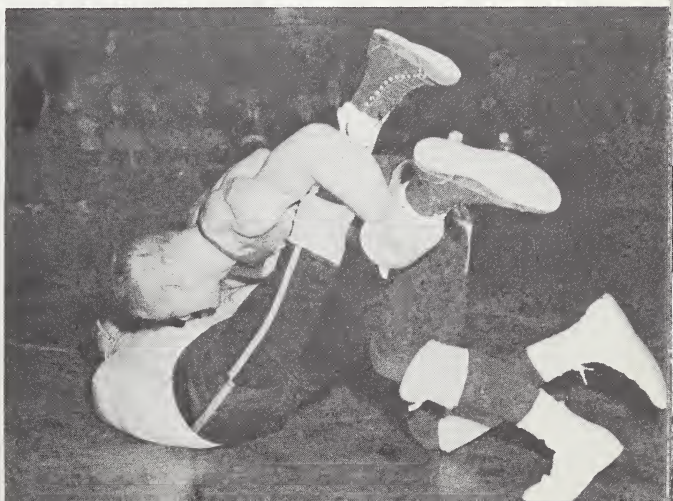




Swimming—Dual home meets are held in the Norman Scott Natatorium where the midshipmen score many triumphs and broke Yale's record winning streak of 201 victories by a 48-47 win.

Track—The Field House provides complete track facilities for the winter program with spring track moving out to the immediately adjacent playing fields for its schedule.

Wrestling—Navy plays an Eastern Intercollegiate Wrestling Association schedule that includes serious opponents every week, and midshipmen have frequently numbered among the national champions.





Spring Sports

Baseball—Midshipmen won 24 of 26 games in 1961 and 19 of 21 in 1962 and the Eastern League championship each of those years. The home games are played at the Academy's Lawrence Field with seats for 5,000 spectators.

Crew—Olympic champions in 1952, Navy crews are usually among the nation's contenders for top honors. The Academy boasts varsity, junior varsity, and plebe shells.





Golf and tennis provide intercollegiate competition for the best of the many midshipmen who are attracted to these games for recreation that can be continued many years in the future.

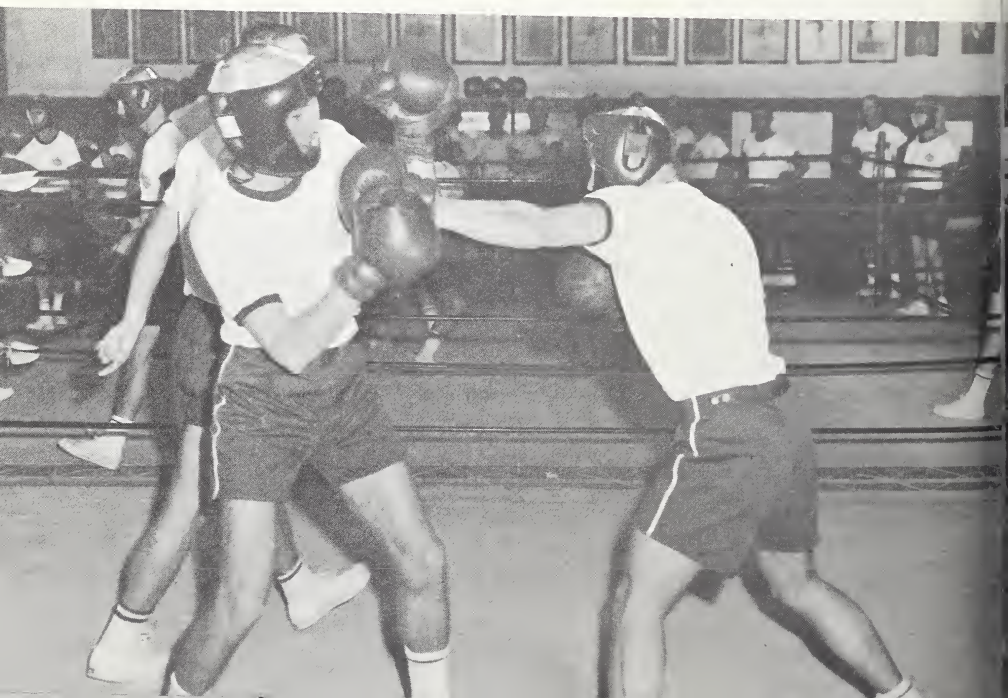
Lacrosse—Navy has won or shared nine collegiate titles and was the only major undefeated team in the country in 1962 in this game invented by the Indians and excelled in by midshipmen. A recent record audience of 14,000 attended a home game.





Intramurals

The sports program of the Department of Physical Education includes competition for the midshipmen in 24 different sports. All midshipmen not on organized teams are required to take part in intramurals.





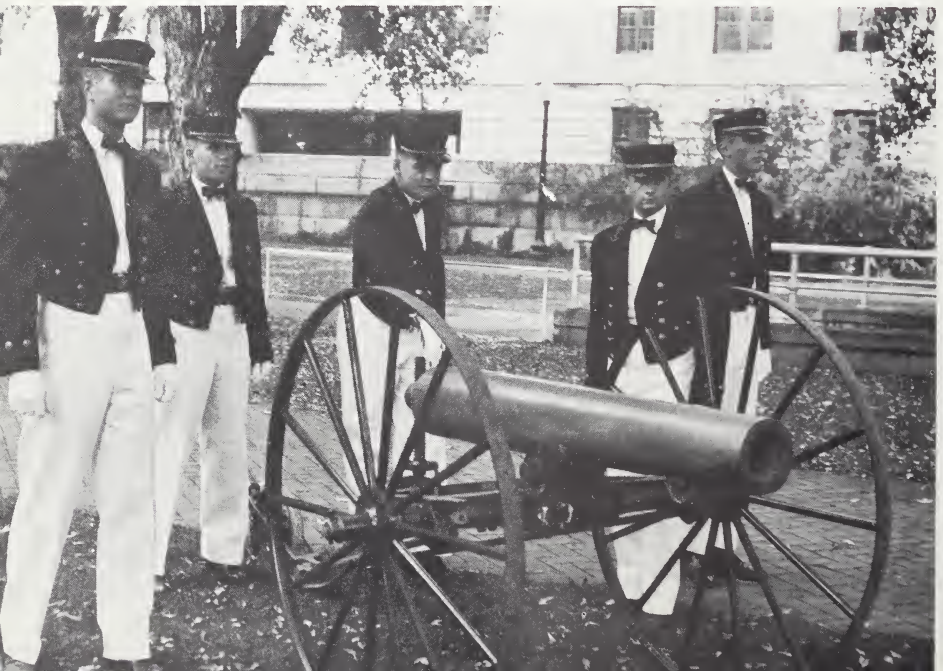
Through intramurals they may compete with others possessing similar athletic ability in a particular sport, while utilizing a fine opportunity for physical development and recreation.





EXTRACURRICULAR ACTIVITIES

As a leisure time pursuit or to develop special interests, a midshipman may choose from among some 70 extracurricular activities. Publications, musical organizations, dramatics, debating, and hobbies of a professional and nonprofessional nature are all pursued and usually in a variety of forms.



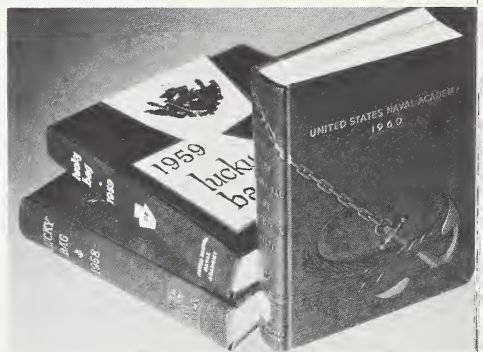
Trident is the Brigade's professional magazine, written and edited by midshipmen.



Lighter moments in words and pictures enliven *The Log*.



The Lucky Bag is the yearbook which preserves the record of the days when the world revolved around Bancroft Hall.



Station WRNV "Radio Navy" and *The Photo Club* are representative of the multitude of hobby organizations.





The Masqueraders—The Midshipmen's dramatic society staged Gogol's *The Inspector General* as its major performance of the 1962-63 season presented in Mahan Hall auditorium.

The Pierrepont Trophy is presented to the winners of the Naval Academy's fifth annual debate tournament by the Superintendent. Fifty-seven colleges participated.





Musical Organizations include the Academy Choir (*above*), the Musical Club which puts on its annual show (*upper right*), the Glee Club (*lower right*), and the Drum and Bugle Corps (*below*) which appears at athletic contests and dress parades.





Cheering for a Winning Team

How To Become a Midshipman at the Naval Academy

Each candidate for admission to the Naval Academy must:

1. Meet general eligibility requirements.
2. Obtain a nomination.
3. Qualify scholastically (academically).
4. Qualify physically.

GENERAL ELIGIBILITY REQUIREMENTS

Citizenship

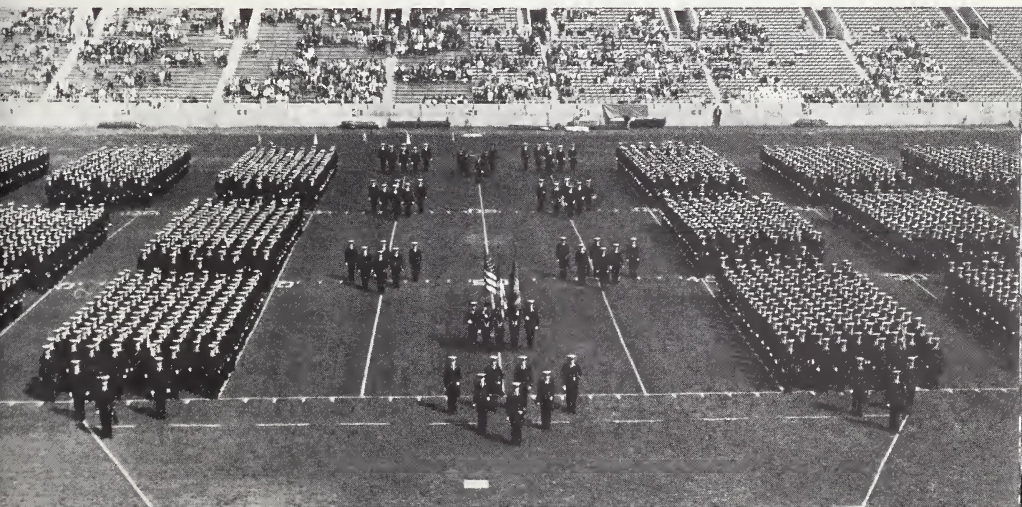
All candidates for admission to the U.S. Naval Academy must be male citizens of the United States, except as provided by law for limited numbers of citizens of other American Republics, and the Philippine Republic. An alien can be admitted as a midshipman only by an Act of Congress.

Age

Age limits are established by law. Candidates must be between 17 and 22 years of age. Each candidate must have reached his 17th birthday but not have passed his 22d birthday on or before 1 July of the year in which admission is desired to be eligible for admission.

Character

Candidates must be of good moral character. This prerequisite is usually passed upon by the Member of Congress making the nomination. The Secretary of the Navy may, however, decline to accept the nomination of any candidate in the event conclusive evidence of unsuitable character is submitted. For other sources of appointments, investigation of character qualifications rests jointly with those authorized by law to sponsor such nominations and the Navy Department.



Marital Status

No person who is married, or who has been married, is eligible for admission to the Naval Academy, regardless of his other qualifications. Midshipmen may not marry, and any midshipman found to be or have been married will be discharged.

OBTAINING A NOMINATION

There are several ways of obtaining a nomination for admission to the Naval Academy. The variety of types of nominations is intended to make it possible for young men from all over the United States to compete for appointments as midshipmen. In the following paragraphs, prospective candidates may learn what appointments they may be eligible for, and how to apply for a nomination for each. In some cases, candidates will find that they are eligible for more than one type of nomination. In such cases, it will usually be to their advantage to apply for more than one nomination.

Candidacy must be established in time to participate in the March administration of College Entrance Examination Board Tests. The Naval Academy will also consider for academic qualification results obtained on the immediately preceding December or January tests of the College Board. Early application and participation in the entrance tests is encouraged. Only the Chief of Naval Personnel may issue authority to take the necessary College Board tests as a formally designated candidate for appointment to the Naval Academy.

Presidential Appointments

Presidential appointments are available to sons of officers and enlisted personnel of the regular Army, Navy, Marine Corps, Air Force, and Coast Guard. To make application for appointment from this source, the candidate or his parent should address a letter to the Chief of Naval Personnel, Navy Department, Washington 25, D.C., clearly indicating the Service connection of the parent and giving the son's full name and date of birth. The letter of application should also designate the year in which admission to the Naval Academy is desired. Letters of application should be forwarded any time after July 1 of the year preceding that in which admission is desired, but not later than February 1 of the admission year.

Seventy-five candidates may be appointed annually from this source. In the event of vacancies in the annual quotas of appointments authorized from the Navy and Marine Corps and the Naval and Marine Corps Reserves, qualified Presidential nominees in excess of the normal Presidential quota may be admitted to fill such vacancies.

Congressional Appointments

The Vice President of the United States, each U.S. Senator, each

Representative in Congress, and the Resident Commissioner of Puerto Rico may have five appointees at the Naval Academy at any one time. The Vice President makes his nominations from the United States at large. The U.S. Senators must make their nominations from among residents of their respective States, and the Members of the House of Representatives must make their nominations from among residents of the Congressional districts which they represent.

Members of Congress are authorized to nominate a maximum of six candidates for each vacancy. The Candidates so nominated are usually designated as the principal and the first, second, third, fourth, and fifth alternates. Members of Congress may designate their nominees as competitive alternates and leave to the Academic Board at the Naval Academy the designation of the principal and the arrangement of the alternates based upon order of merit.

Application for nomination should be made directly to the Vice President, Senator or Representative. It is in order for a candidate to include in his letter of application for a nomination such items as favorable endorsements by school officials and others. Application should be made at least a full year in advance of the year in which the candidate hopes to enter as a midshipman, because some Members of

**The Final Goal
of Plebe Year**



Congress require candidates to compete for nominations by taking a special examination for that purpose. Such examinations are usually held in July or November, and they are not to be confused with, or considered a substitute for, the College Entrance Examination Board tests required by the Naval Academy.

Appointments From the Regular Navy or Regular Marine Corps

One hundred and sixty appointments annually are available to enlisted men on active duty in the regular Navy or Marine Corps. Enlisted men desiring to become career commissioned officers should apply to their commanding officers for permission to take a preliminary screening examination which will be given throughout the Naval Establishment early in July of the calendar year preceding that in which admission to the Naval Academy is sought. Those who successfully pass the initial screening measures will be assigned to the preparatory school which the Navy maintains to aid enlisted candidates in their preparations for the formal entrance tests and for the Naval Academy program. The entrance tests consist of the College Entrance Examination Board Scholastic Aptitude Test and achievement tests in English and mathematics. The competitive rating of the successful candidates will be determined by the Naval Academy Academic Board, and will be predicated upon a "whole man" evaluation, including test scores; school records; extracurricular activities, both athletic and nonathletic; and upon the assembled evidences of motivation and good character. Qualified candidates in excess of this quota may be appointed to fill vacancies in the quotas of the President and the Naval and Marine Corps Reserves.

Appointments From the Naval Reserve or Marine Corps Reserve

One hundred and sixty appointments annually are available to enlisted men of the Naval and Marine Corps Reserves, whether on active or inactive duty. Applicants must have had at least 1 year in the Reserve by July 1 of the year of admission to the Naval Academy. They must have attended a minimum of 26 drills between July 1 and March 15, preceding admission. Active service may be accepted in lieu of drills, 1 full day of active service being the equivalent of one drill.

Those who are successful in obtaining authority to compete for appointment from this source will be authorized to appear for the formal entrance tests, which consist of the College Entrance Examination Board Scholastic Aptitude test and the one-hour achievement tests in mathematics and English. The competitive rating of the successful candidates will be determined by the Naval Academy Academic Board, and will be predicated upon a "whole man" evaluation, including test scores; school records; extra-curricular activities, both athletic and nonathletic; and upon the assembled evidences of motiva-

tion and good character. Qualified candidates in excess of this quota may be appointed to fill vacancies in the quotas of the President and of the Regular Navy and Marine Corps.

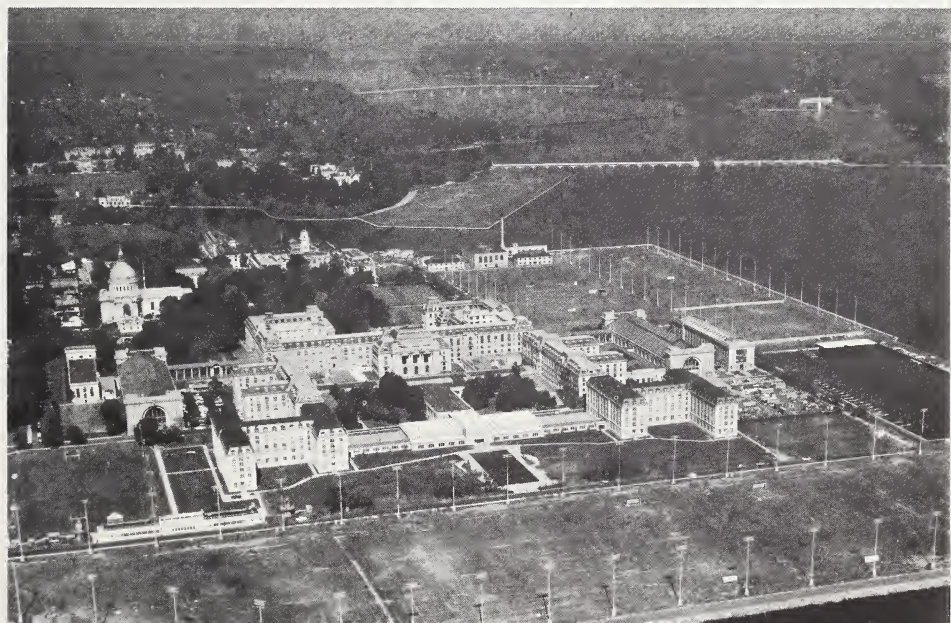
Naval and Marine Corps reservists who are on regular (not training) active duty at the time of formal nomination for appointment may also apply for assignment to the preparatory school which the Navy maintains to aid enlisted candidates in their preparations for the entrance tests, and for the Naval Academy program.

Appointments From Honor Military and Naval Schools

An honor graduate or a prospective honor graduate of a designated honor military or naval school should apply to the principal of his school for nomination as a candidate for admission to the Naval Academy. Each designated honor military or naval school may nominate 3 honor graduates or prospective honor graduates each year to compete among themselves for 10 vacancies for midshipmen. The details of submitting nominations are handled by the school concerned and the Chief of Naval Personnel, Navy Department, Washington 25, D.C.

Appointment From NROTC Units

Only contract students in the Naval Reserve Officers Training Corps units at the various colleges and universities are eligible to apply for appointments from this source. Contract students should apply to the professor of naval science at the college or university, who will in turn forward his recommendations to the president of the college. Not more than 3 candidates may be nominated each year by each of the educational institutions in which an NROTC unit is in operation to compete among themselves for 10 vacancies to the Naval Academy.





Congratulations

Other Sources of Appointments

Those applying for nominations under the laws providing for the sons of deceased veterans and the sons of holders of the Medal of Honor should write to the Chief of Naval Personnel, Navy Department, Washington 25, D.C. Such applicants should give the full name, rank or rating, and organization of the deceased veteran or the holder of the Medal of Honor, the full name of the candidate for appointment as midshipman, his date of birth, and such other pertinent information as will assist in the positive identification of both the parent and the candidate. Residents of the District of Columbia should apply directly to the Commissioners of the District of Columbia for full details at least 1 year in advance of the year in which the candidate hopes to enter as a midshipman.

Application for appointment from the Canal Zone, Virgin Islands, Guam, or American Samoa must be addressed to the respective Governor, and application for the appointment of a native of Puerto Rico must be addressed to the Governor of Puerto Rico.

Additional Appointments From Among Qualified Alternate Nominees and Competitive Candidates

The Secretary of the Navy is authorized to appoint additional midshipmen from qualified alternates and qualified competitive quota candidates in order to bring the Brigade of Midshipmen to authorized strength. When the number of additional admissions is determined, the Academic Board will review the records of all scholastically qualified candidates within each nomination source. Application by the individual is not necessary or desired since all qualified candidates are considered by the Academic Board. Selections will be made from those whose records are outstanding in scholarship, whose character and personality are established as decidedly superior in statements of recommendations from school and other officials, and in whose cases there is marked evidence of leadership potential as indicated by class offices held, participation in extracurricular and community activities, and other achievements of note. At least two-thirds of those so appointed must be from qualified congressional alternates.

QUALIFYING ACADEMICALLY

Scholastic Preparation

The scholastic requirements for admission to the Naval Academy and the arrangement of the first-year course of instruction anticipate a 4-year high school course as the minimum of preparation. The ideal arrangement of preparatory studies is one which includes 4 years of English; at least 3 years, but preferably 4 years of mathematics

including algebra, geometry, and trigonometry; chemistry; physics, U.S. history; at least 2 years of a foreign language; and mechanical drawing. The remaining courses necessary to round out the full high school schedule should be chosen from courses such as biology, the foreign languages, philosophy, astronomy, economics, government, physical geography, or from among other subjects in the social or physical sciences. At least 15 units of credit should be presented. Graduation from an accredited 4-year high or preparatory school (or its equivalent) is mandatory, and the record of work done must be acceptable to the Naval Academy Academic Board in terms of subject matter and level of achievement. Preparation should be thorough, because at the Naval Academy the pace is rapid and midshipmen are required to participate in other areas of instruction looking toward the development of suitable military character.

The courses in the desirable subjects that are offered in the high and preparatory schools throughout the country that are accredited by the recognized accrediting agencies are adequate in content and scope to fulfill Naval Academy requirements and in preparation for the essential College Entrance Examination Board tests.

Method of Qualifying

There are two methods by which a candidate may qualify academically for admission to the Naval Academy:

1. College Board tests and secondary school record.
2. Secondary school and college certificates.

Candidates holding noncompetitive congressional nominations and the sons of holders of the Medal of Honor are permitted to utilize either of the two methods, and in these instances it is the candidate's responsibility to determine which method offers him the greater possibility of success. All other candidates must take the necessary College En-

Bancroft Hall at Night



trance Examination Board tests in December, January, or March of the school year preceding admission.

In the following brief description of the two methods, only the essential features are covered. Candidates, prospective candidates, and school officials are invited to correspond with the Dean of Admissions, U.S. Naval Academy, Annapolis, Md., regarding any point in the admission requirements on which further information is desired.

All candidates for admission must have an accredited high school certificate. It is important that each candidate insure that his complete high school record and the record of any college work which he may have completed be furnished the Naval Academy.

College Board Tests and Secondary School Record Method

The basic method of qualifying is by presenting an acceptable secondary school record and taking the College Entrance Examination Board tests, as follows: The Scholastic Aptitude Test (verbal and mathematics sections), the English Achievement Test, and either the Intermediate or the Advanced Mathematics Achievement Test.

All candidates for appointment from the various competitive sources and all other candidates not qualifying by the College Certificate Method must take this series of tests.

Each duly nominated candidate must register with the College Entrance Examination Board for the December, January, or March series of tests as promptly as possible after receiving the necessary instructions from the Bureau of Naval Personnel, Navy Department, Washington 25, D.C. These instructions will provide for payment by the Navy of fees for tests. Although the Navy Department will pay for only one administration of the tests, the Naval Academy will accept scores from the other administrations specified above and will credit the candidate with the highest scores achieved.

Information on the tests, including dates of administration, location of testing centers, dates by which candidates must register, method of application, etc., is published in a booklet entitled *Bulletin of Information*. A copy may be obtained without charge by writing to the College Entrance Examination Board, Post Office Box 592, Princeton, N.J., or Post Office Box 27896, Los Angeles 27, Calif.

Satisfactory scores on the College Entrance Examination Board Tests will be determined by the Academic Board of the Naval Academy. No candidate will be admitted to the Naval Academy unless in the opinion of the Academic Board he shows the requisite mental qualifications.

A high school certificate is required for eligibility and school records will be a consideration in determining whether or not a candidate is to be accepted. A good secondary school record is one which reports

grades of good quality for a desirable arrangement of preparatory courses chosen from those listed above under the heading of "Scholastic Preparation," and a breadth of school interests and extracurricular activities indicative of a well-rounded student. For other than exceptional cases, no credit will be allowed in a certificate, or as evidence of required review, for work done under a tutor, in correspondence courses, or in nonaccredited schools.

College Certificate

This method of fulfilling the educational requirements for admission is available only to candidates holding noncompetitive congressional nomination and to sons of holders of the Medal of Honor.

To qualify by the college certificate method, a candidate must, in addition to satisfying the requirements in a secondary school certificate, present a certificate from an accredited junior college, technological school of college grade, college, or university, attesting the completion of 1 year of college work with grades acceptable to the Naval Academy. The college certificate must include at least 6 semesters hour of mathematics selected from college algebra, trigonometry, calculus, etc., 6 of college English and/or history, and sufficient other subjects acceptable to the Naval Academy to establish a total of at least 24 semester hours of credit for the year's work. College credits which have been used to offset deficiencies in a high school certificate will not be counted toward meeting the requirements for an acceptable college certificate.

Any candidate who is at all uncertain as to his ability to qualify by the college certificate method is strongly advised to take the entrance examination. However, failure to score acceptably on the entrance examination will disqualify the candidate for entry in that year.

QUALIFYING PHYSICALLY

The Chief of Naval Personnel, Navy Department, Washington 25, D.C., will send to each duly nominated candidate an authorization designating time and place of physical examination. Physical examinations are conducted at specified naval hospitals, and other specified naval activities in various parts of the United States during the months of October through March. Candidates are required to be physically fit, well-formed, and of sound constitution. The physical requirements are exacting. The best interests of the Government, the Navy, and the individual demand that they be so.

Detailed information concerning the physical requirements and the list of places at which examinations are given is contained in the pamphlet "Regulations Governing the Admission of Candidates into the United States Naval Academy as Midshipmen," which may be obtained from the Chief of Naval Personnel or from the Naval Academy.

General Information

PAY AND ALLOWANCES

The pay of a Midshipman is \$111.15 a month (\$1,333.80 a year), commencing at the date of his admission. The purpose of this pay is to cover expenses associated with training at the Naval Academy, including the following items:

- a. Prescribed uniforms and required clothing.
- b. Textbooks and equipment.
- c. Sundries (for cleanliness, health, and relaxation).
- d. Services (laundry, tailor, cobbler, and barber).
- e. Moderate allowance for extracurricular activities (to broaden professional background and competence).
- f. Leave money (provided a sufficient balance is maintained in the account).
- g. Moderate allowance to maintain outfit.
- h. Funds to purchase necessary uniforms and equipment for graduation outfit so that the graduate will be in all respects ready to assume duties as a commissioned officer.

In addition, there is a ration allowance at the rate of \$1.35 per day intended to provide board. It is used entirely for that purpose.

Midshipmen are expected to live frugally and within the limits of their pay. Maintenance allowances are designed to meet normal demands. Through wise use of pay, it is possible to have funds available to meet expenses during annual leave periods.

Medical, dental, and hospital services are furnished without cost to all midshipmen in a fashion similar to services furnished to other personnel of the Navy on active duty.

ENTRANCE DEPOSITS

In order to defray part of the initial outfitting, candidates upon admission to the Naval Academy must deposit the sum of \$300 (exceptions are made in cases of extreme hardship down to \$100 minimum). In addition, the Government advances \$600 for the purpose of outfitting, such advance constituting an obligation against the individual account until sufficient credit has accumulated to liquidate the advance. The advance is systematically liquidated at a rate of \$20 a month, commencing with October of the second year in the Naval Academy.



The Naval Officer's Career

A WAY OF LIFE

Inscribed in Latin above the bronze doors of the Naval Academy Chapel is the motto, "Not Self, But Country"—a motto which the young candidate embraces the moment he takes the oath as a midshipman and which will be a part of his being for the rest of his life. His education at the Academy has been designed for one purpose only: to prepare him for a lifetime career as a dedicated professional in the naval service. After 4 years of intensive study at Annapolis, he is ready to assume his responsibilities as an officer in the greatest Navy in the world.

This is a complex Navy—one whose ships range every ocean, whose officers and men not only sail the seas but who are engaged in construction and research from the tropics to the poles, whose supersonic planes have provided the training ground for America's first astronauts, whose nuclear submarines are a testimony to America's engineering genius, whose leaders advise in the highest councils of government, whose Marines stand second to none where tales of valor are told.

This is a vastly complicated and technological Navy, yet one in which the human being is, in the end, all important. It is an organization which puts a high premium on leaders with vision, dedication, and ability. It is a Navy with a proud past and a promising future, broad enough to provide a stimulating challenge in a wide spectrum of interesting fields.

FIRST DUTY

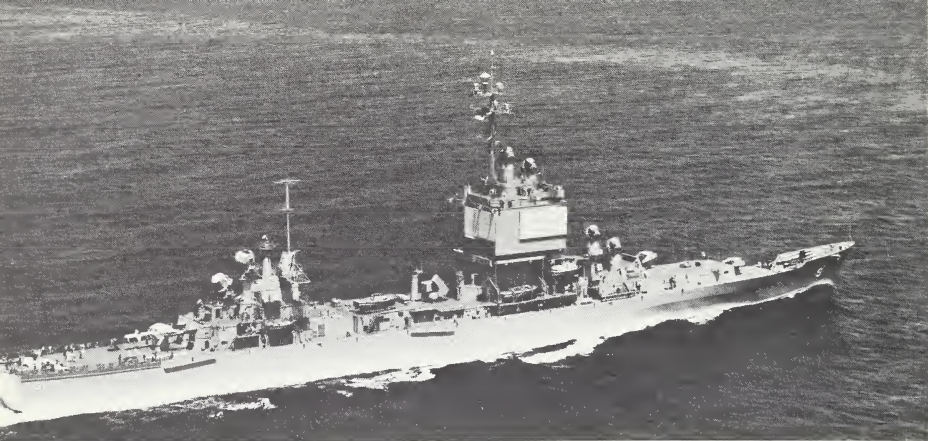
A graduate's first career opportunity comes in his choice of branch of the Service. The priority assigned his individual preference is dependent upon a number of factors, including his standing in class, the needs of the Service, and his personal qualifications; but every attempt is made to assign him to the duty and locality of his first choice.

Whatever his initial operational duty, he will usually find that his responsibilities are larger than those of his contemporaries in civilian life. Most Naval Academy graduates are commissioned as ensigns in the line and are, thus, ultimately headed for command at sea. The majority go to sea initially in a combatant-type ship—i.e., aircraft carrier, cruiser, destroyer, or amphibious craft—but some are kept ashore to attend specialized schools before joining the fleet. Included in this group are those graduates entering the nuclear submarine field and those headed for flight training and a career in naval aviation.

A small number are commissioned on graduation in the Civil Engineer Corps, in the Supply Corps, or as Engineering Duty officers. The civil engineer designees, after a short tour in a Public Works or Seabee outfit, proceed to a civilian university to pursue a post-graduate course. Supply Corps officers attend a special Navy school of several months' duration prior to their first operating assignment. The Engineering Duty officers (specialists in ship design, construction, and repair) will normally spend several months aboard ship before returning to postgraduate work. Those commissioned as Second Lieutenants in the Marine Corps are ordered to a course in basic training before joining regular Marine units.

OFFICER EDUCATION AND TRAINING

Upon graduation and commissioning, the new officer may lay his books aside momentarily, but his theoretical and practical education will continue as long as he is in the Service. From graduation day forward, he will continue to prepare himself for assignments of greater responsibility and professional attainment by acquiring practical experience ashore and afloat and through advanced academic work. The extent of his attainment is limited only by his own ability, initiative



USS *Long Beach*—Nuclear Powered Missile Cruiser

energy, and resourcefulness, commensurate with logical career planning.

The Naval Academy is considered but the first step in the educational ladder for the typical officer, and so the Navy sponsors a wide variety of programs, at both naval and civilian institutions, designed to prepare the officer for higher responsibility in the service of the United States. This move toward postgraduate education is begun in some cases before graduation, when a few midshipmen are selected to compete for scholarships in civilian universities. Most notable in this area, and the one in which Academy graduates have been most successful to date, has been the Rhodes Scholarship, tenable at Oxford University.

As noted above, a small number of officers who have been selected for a specialty career in engineering will normally proceed to postgraduate work for the master's degree shortly after graduation. For the majority, however, Navy functional and basic technical courses provide their first post-commissioning training. Mostly of short duration, they are in such fields as communications, gunnery, antisubmarine warfare, damage control, electronics, and amphibious warfare.

After his first tour (3 to 6 years) of operational duty with the Fleet, the qualified Naval Academy graduate may expect orders to a postgraduate school for one or more years. Many fields of study are open to him, including, but not necessarily restricted to, those of mathematics, physics, general science, various types of engineering (nuclear and aeronautical, for example), management, international relations, and naval intelligence. For the best qualified, the way is open for a doctorate. Courses are conducted at the U.S. Naval Postgraduate School, Monterey, Calif., the Naval Intelligence School, Washington, D.C., Test Pilot School, Patuxent River, Md., and various civilian institutions such as Carnegie Tech, Harvard, M.I.T., Princeton, Rensselaer, Stanford, and Tulane.

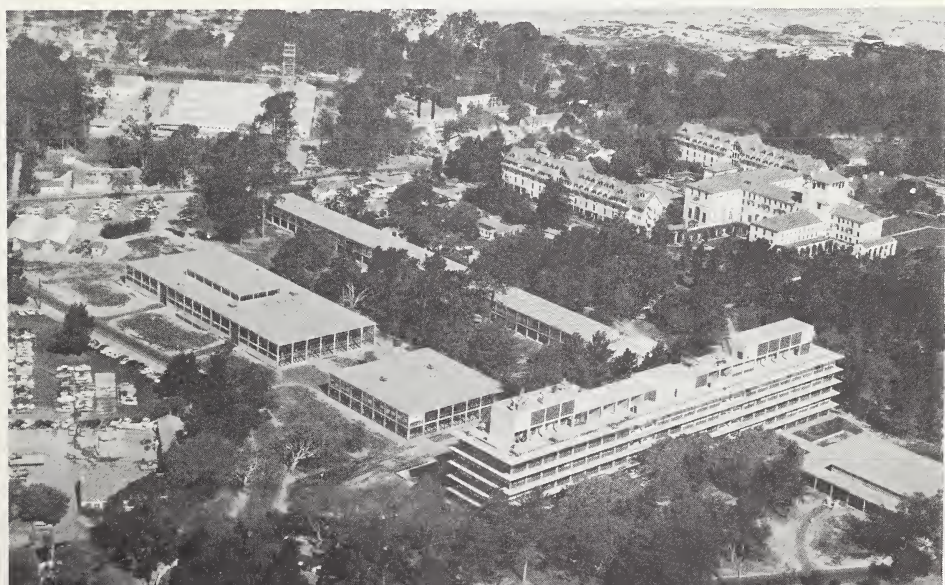
It should be noted that opportunities for postgraduate work are afforded not only in the early years of commissioned service, but that they continue throughout an officer's career. Senior war colleges, in particular, are noted for bringing officers up to date on problems of international import and their effect on our global strategy. The officer who aspires to positions of high responsibility will, of necessity, have to continue to grow intellectually and thus to be part-student all of his professional life.

OFFICER CAREER PATTERNS

Within the framework of the needs of the Service an officer determines his own career pattern to a significant degree through his requests for assignments afloat and ashore, his advanced studies, and, of course, by his performance. Most graduates, after their first tour at sea, elect to continue as line officers, many of them requesting assignment at this time to flight or submarine training. A small number may apply to serve in more specialized fields, and are designated, as were some of their classmates at graduation, as Civil Engineer Corps, Supply Corps, or Engineering Duty officers. The careers of many of these specialists tend to concentrate in the industrial management field and, to some extent, in research and development, and much of their work is with the civilian world.

A line officer finds that tours of operational duty with Fleet components are alternated with assignments to bureaus, offices, and activities in the Navy's vast shore establishment. Experience at sea is of prime importance to this officer, for it is at sea that he increases his competence as a mariner and as a leader. The early years of experience at sea form a basis for his career which will include bringing his sea-going experience to the management of certain supporting

U.S. Naval Postgraduate School, Monterey, Calif.



shore facilities. Assignments are varied and interesting, and include not only military command but the opportunity to work with the civilian employees of the Armed Forces as well as with members of other Services. In all assignments, individual preference is given careful consideration.

Officer careers continue along many paths, depending upon individual experience and background. After his postgraduate tour, a line officer may return to sea as a head of department in a destroyer or commanding officer of a smaller combatant vessel. Line officers who are aviators may expect to resume duty in an aircraft squadron based in a carrier or ashore. Others who are qualified in submarines will continue in duties preparing them for submarine command, which comes after about 12 years of commissioned service.

Every officer may expect to serve in billets in which his naval education will be most valuable. Many line officers qualify for a subspecialty which they exercise during periods of shore duty. These specialties include such varied fields as naval intelligence, oceanography, communications, meteorology, nuclear engineering, and aeronautical engineering. In addition, officers aspiring to command at sea will serve in a variety of ships or aircraft in different capacities, as well as in staff and planning billets afloat and ashore, in the United States and overseas, to prepare them further for command.

It is a satisfying, but demanding, life. The naval officer presents many faces to the world: Fleet Commander, engineer, scientist, diplomat, educator. His is not just a job, but a way of life—a career dedicated to the service of the United States carrying with it high professional prestige and the opportunities for broad experience—a career which rewards the industrious, the sincere, the adventurous, and the imaginative. The Navy is not a career field for those who prefer a soft life to shy away from challenges. It is, rather, one for those to whom the homely virtues of the strenuous life, patriotism, and dedication to an ideal have a real meaning which can be translated into a lifetime of service in the Navy of the United States.





Sea Bees Exploring Antarctic Ice Cave

Outer Space,
New Frontier
for the United
States Navy





**For Defense
of the Free World**

The Board of Visitors

A Board of Visitors to the Naval Academy is constituted annually of the chairman of the Committee on Armed Services of the U.S. Senate, or his designee; three other members of the Senate designated by the Vice President of the United States or the President *pro tempore* of the Senate, two of whom are members of the Committee on Appropriations of the Senate; the chairman of the Committee on Armed Services of the U.S. House of Representatives, or his designee; four other members of the House of Representatives designated by the Speaker of the House of Representatives, two of whom are members of the Committee on Appropriations of the House of Representatives; and six persons designated by the President of the United States.

The Board meets annually at the Naval Academy to inquire into the state of morale and discipline, the curriculum, instruction, physical equipment, fiscal affairs, academic methods, and related matters and submits a written report of its action and its views and recommendations pertaining to the Naval Academy to the President of the United States.

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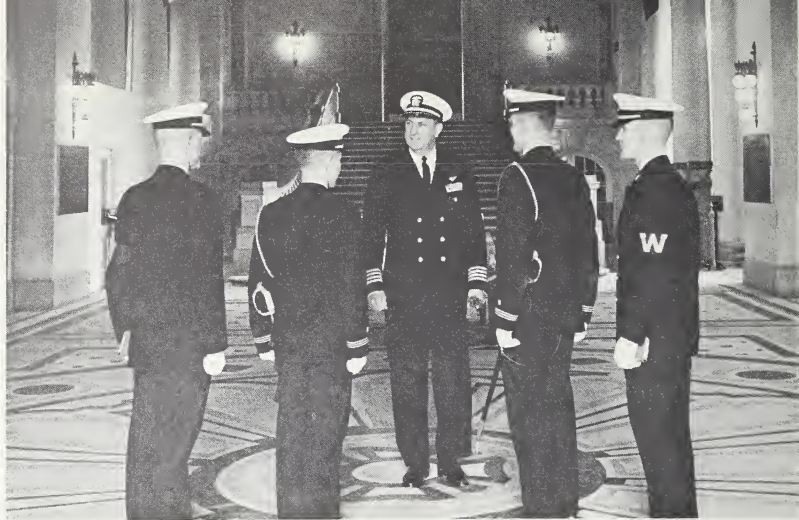
The Superintendent in Conference with a Midshipman Officer of the Brigade. Admiral Kirkpatrick, who was graduated from the Naval Academy in the Class of 1931, commanded the submarine *Triton* and the destroyer-minelayer *Shea* during World War II. He received numerous decorations for extraordinary heroism, including three Navy Crosses. His recent tours include Chief of Information, Navy Department; Command of an Amphibious Group; and Commander of the Pacific Fleet Training Command.

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Executive Officer—Captain Kenneth B. Brown, USN

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Head, Operations Division—Commander Vincent L. Cassani, Jr., USN

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USMC

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Fifth Battalion Officer—Commander Ernest W. Holloway, USN

Sixth Battalion Officer—Commander Richard C. Maurer, Jr., USN

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L. Fitchett (S.C.) USN

Officer-in-Charge, Midshipmen's Store—Commander Clarence H.
Walton (S.C.) USN

Midshipmen's Commissary Officer—Commander "J" P. Tice, (S.C.)
USN



The Registrar Consults the Secretary of the Academic Board

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- Robert B. Whitegiver, Lieutenant Commander, USN; B.S., U.S. Naval Academy.
- Walter J. Wysocki, Lieutenant Commander, USN; Rice Institute; U.S. Naval Postgraduate School.



Bancroft Hall Entrance Lobby

Important Dates for Candidates

1963

- July 1 The Navy Department begins officially accepting the names of candidates nominated for admission in the following year.

In this month, the U.S. Civil Service Commission holds the first of several special competitive tests for Members of Congress who utilize this means of selecting their candidates.

- December 7 Administration of College Entrance Examination Board Tests.

1964

- January 11 Administration of College Entrance Examination Board Tests.

- February 1 Closing date for the receipt of nominations of candidates.

- March 7 Administration of College Entrance Examination Board Tests.

- April 23 Bureau of Naval Personnel will notify candidates of results of College Board tests.

- Dates to be announced Date physical reexaminations will commence at Naval Academy for candidates authorized to report for same.

- June 26 Date on which qualified candidates will be authorized to report at Naval Academy for appointment as midshipmen.

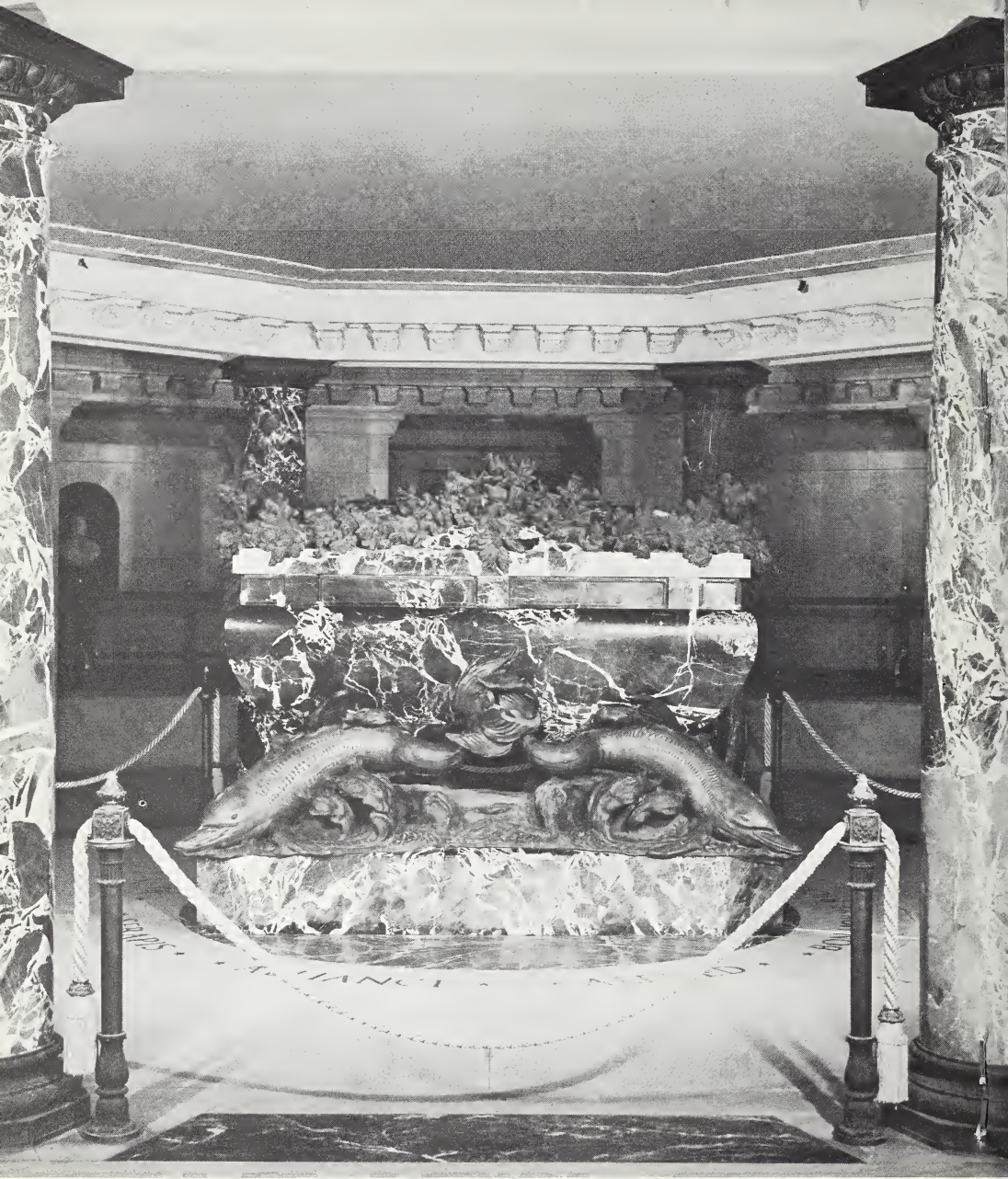
Academic Calendar 1963-1964

First Term

23-25 August	Parents' Open House, Class of 1967.
Monday, 26 August	First term recitations begin, Fourth Class.
Tuesday, 3 September	Leave and summer training ends, First, Second, and Third Classes.
Monday, 9 September	First term recitations begin, First, Second, and Third Classes.
Friday, 20 December	Christmas leave begins.
Thursday, 2 January	Christmas leave ends.
Saturday, 18 January	Examinations begin.
Friday, 24 January	Examinations end.
Friday, 24 January	End-of-term leave begins.
Sunday, 26 January	End-of-term leave ends.

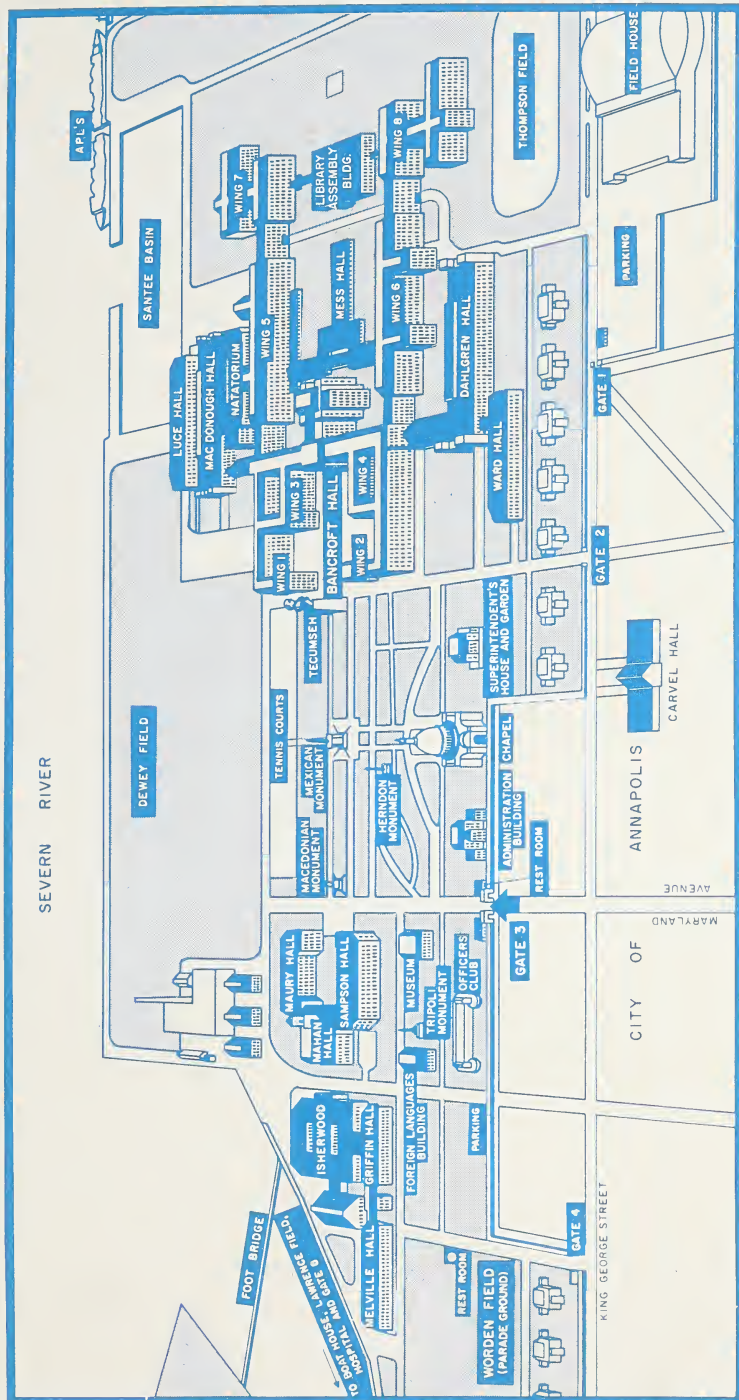
Second Term

Monday, 27 January	Second term begins.
Friday, 20 March	Spring leave begins.
Monday, 23 March	Spring leave ends.
Monday, 18 May	Examinations begin.
Saturday, 23 May	Examinations end.
Friday, 29 May	June Week begins.
Wednesday, 3 June	Graduation.



**The Sarcophagus of John Paul Jones Lies in the Crypt under the Dome of
the Naval Academy Chapel**

The United States Naval Academy



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